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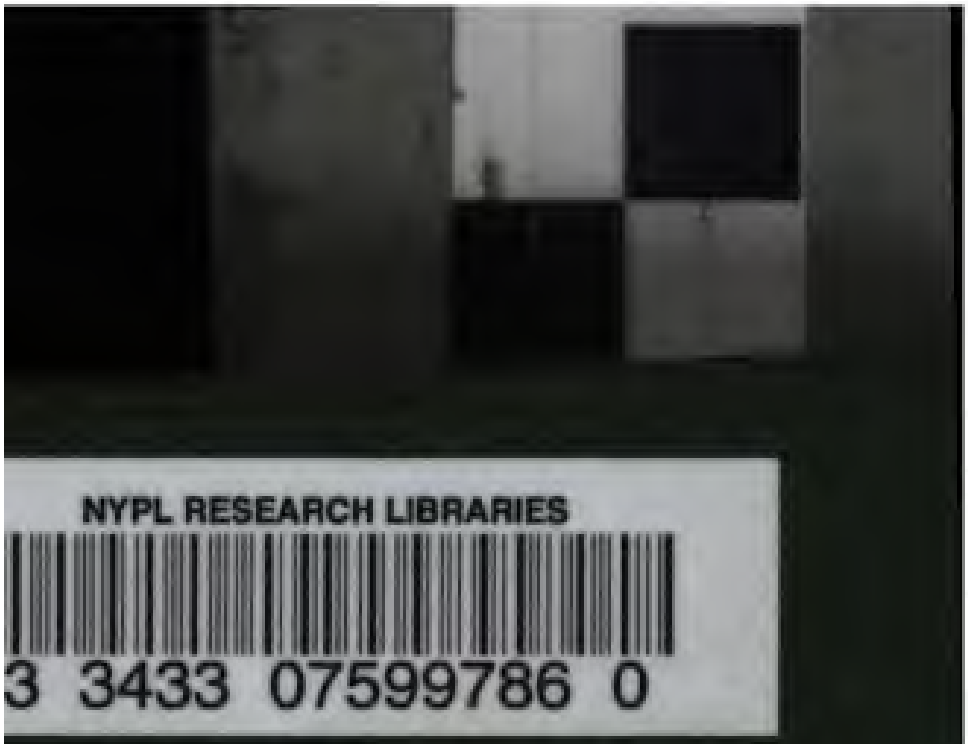
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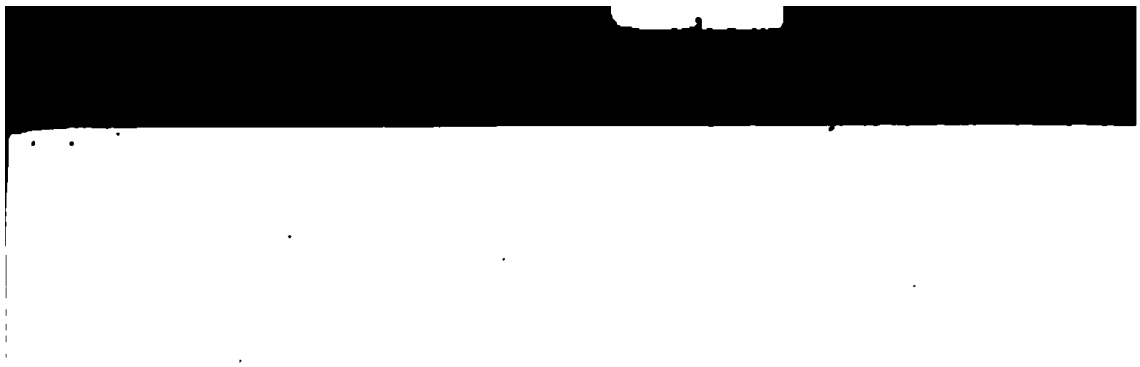
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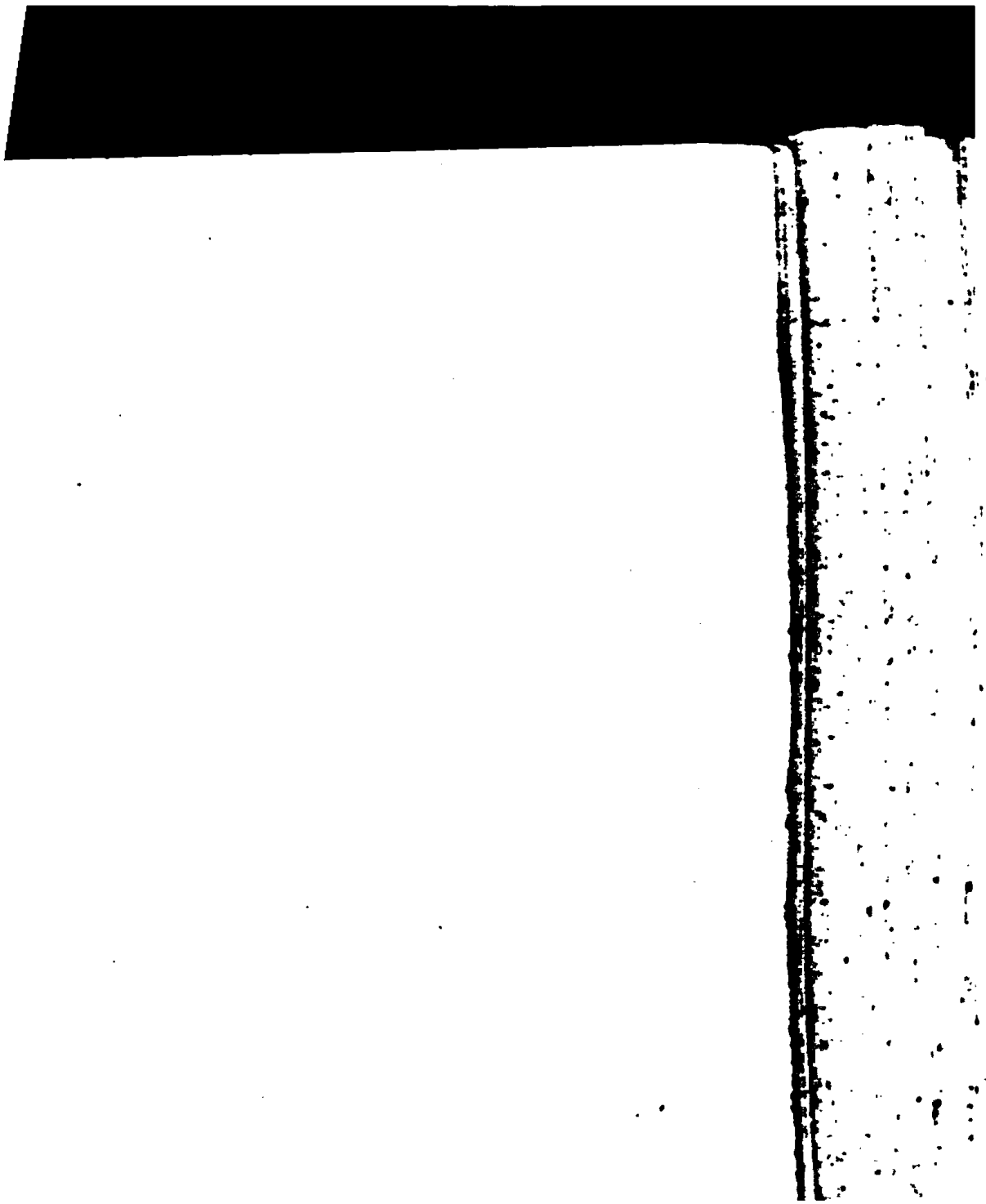
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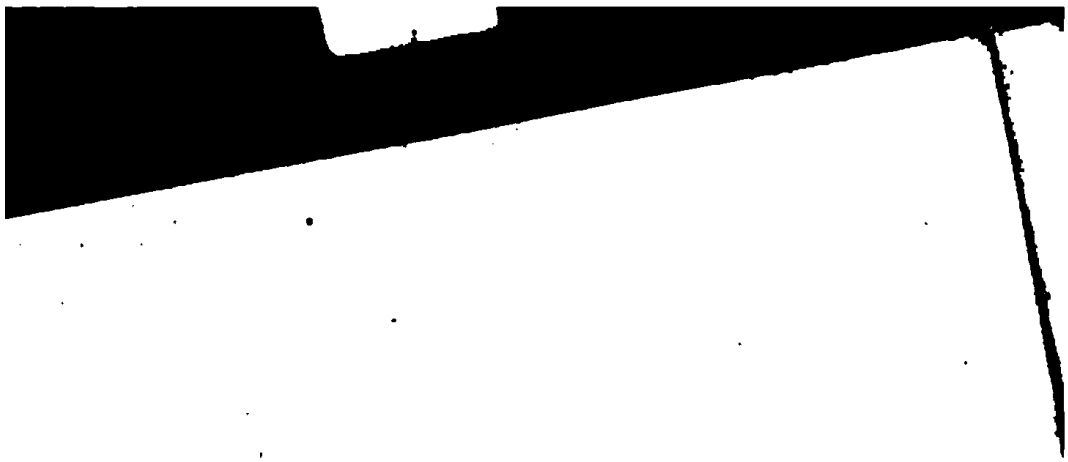
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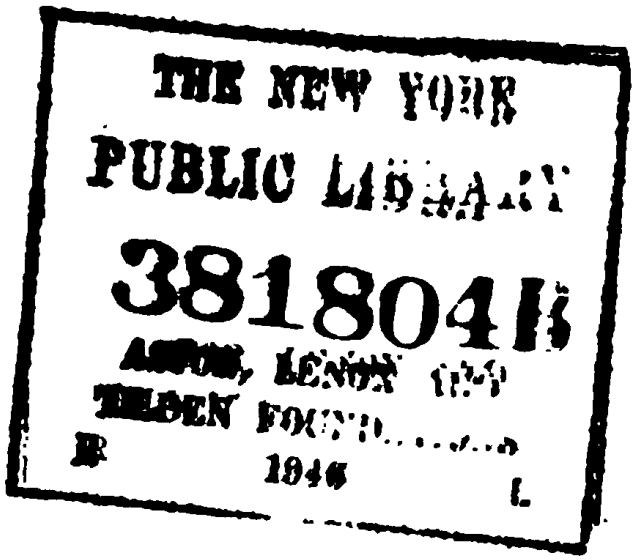
BRITISH AND AMERICAN EDUCATION

The Universities

OF THE TWO COUNTRIES COMPARED

BY

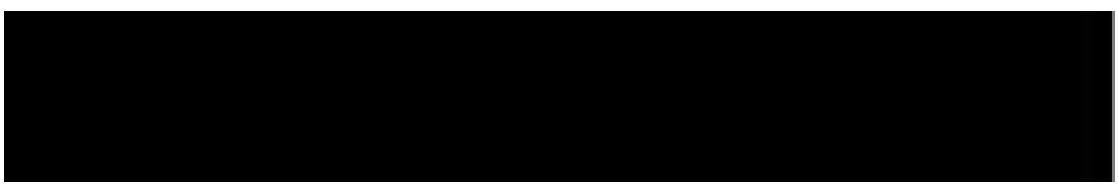
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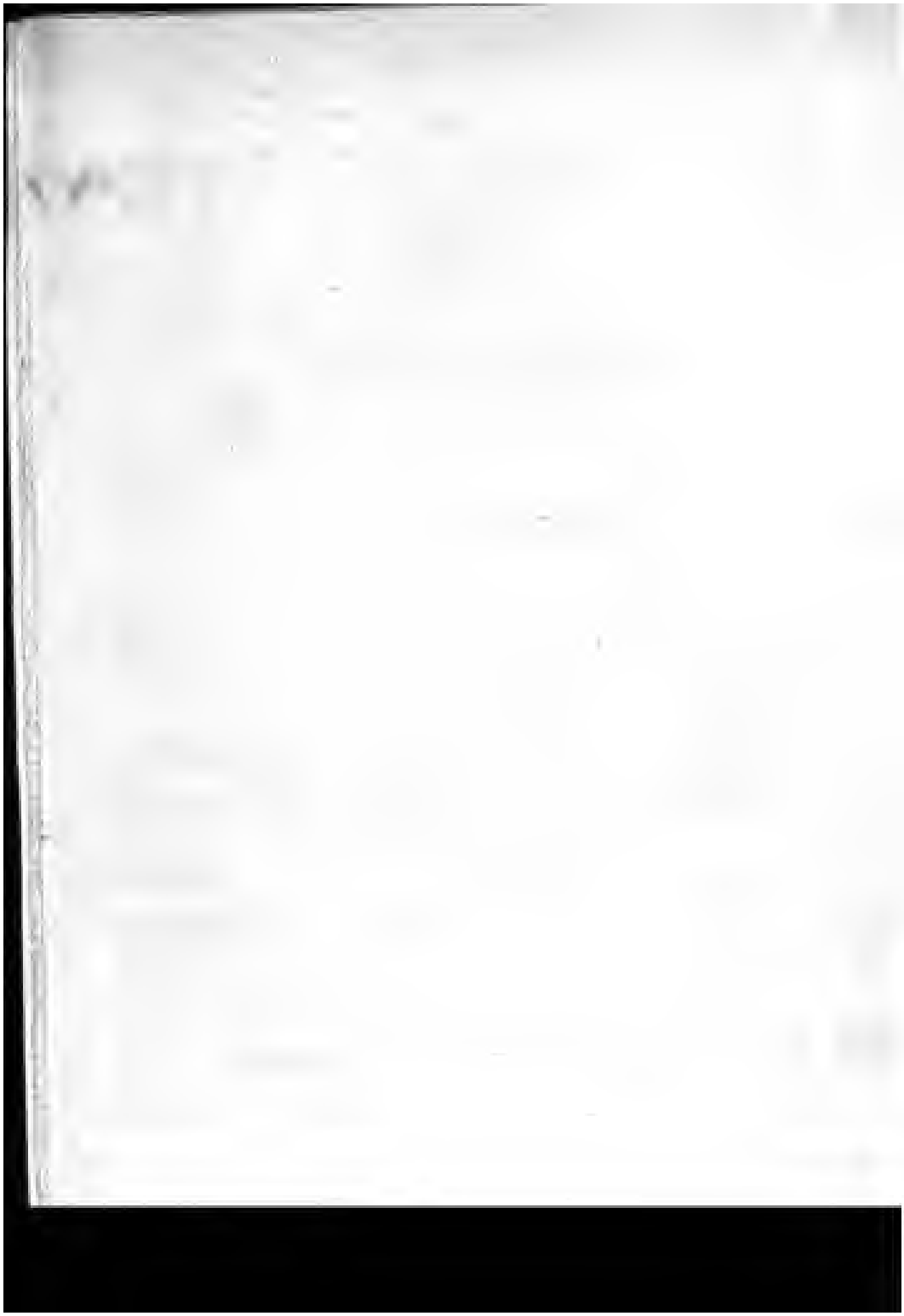
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PREFATORY NOTE.

THE papers here collected originally appeared in the Sunday editions of *The Sun*. Their common aim is to indicate the scope and methods of British university education by comparison with some well-known American institution. For that purpose an American college was selected which might fairly be called typical, and with



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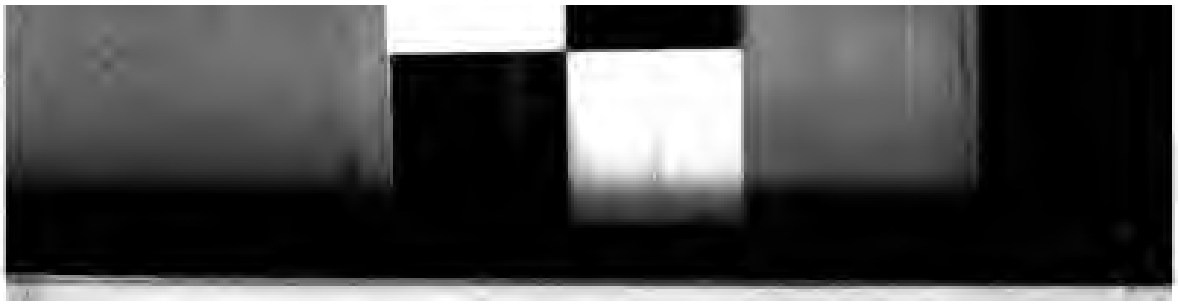
XVI.

TISH UNIVERSITIES.

I.

ERSITY EDUCATION IN ENGLAND.

sometimes taken for granted that
cation supplied by English univer-
superior in range and quality to
orded by our foremost American
. If we have in mind merely the
m of knowledge required for a de-



endars of Oxford and Cambridge, and of the London University. Premising that the field of labor is, to a large extent, optional in both countries, let us direct our inquiry to the measure of proficiency demanded for graduation under the most creditable circumstances, or, to use the technical phrase, with the highest "honors" in the single field of classical attainments.

Let us first indicate, very briefly, however, the evidence for the assertion that, in England, a simple B.A. degree means, at all events, no more, and apparently somewhat less, than the same diploma conferred by Harvard. Bearing in mind that the great majority of students in English universities are content to "pass," as it is called,

ry, six books of the Æneid, three
of Plato, three books of Tacitus. To
ust be added some command of Eng-
omposition, and an elementary ac-
ance with the history of England,
some other modern nation; also, the
es of Greek and Roman history, and
ower of translating simple English
atin and Greek prose without gram-
al blunders. A candidate must also
ttested, at some period of his career,
rudimentary knowledge of algebra
eometry, including, in the one case,
atic equations containing one un-
n quantity; and, in the other, cover-
ook III. and the first nine proposi-
in Book IV. of Euclid's Elements.

University, because they exact, upon the whole, even more narrow classical attainments.

We may now point out the minimum of work demanded by the Harvard degree of A.B. in the case of an undergraduate who elects to continue classical studies throughout his course. Here, again, we shall group together the books required for matriculation, as well as those prescribed or offered at the ensuing public examinations, which are at least three times as frequent at Harvard as at Oxford. We find the curriculum includes the whole of Cæsar, the whole of the Æneid, ten orations of Cicero, the whole of Xenophon's Anabasis, three books of the Iliad, selections from the Hellenica, and four books of the Mem-

in the way of classical acquirement,
a higher degree of proficiency in writ-
atin and Greek prose is called for than
e pass course at an English university.
mathematics, we observe that the min-
requirement for matriculation com-
s a knowledge of algebra, thorough
ratic equations and logarithms, and of
lane geometry, which is supplemented
e freshman year by an advanced course
ebra, together with the elements of sol-
ometry, of plane trigonometry, and ana-
geometry. A survey of these data will
ce demonstrate that a Harvard degree
s more than a pass-man's certificate at
nglish university. Americans, there-
can appraise the attainments of an

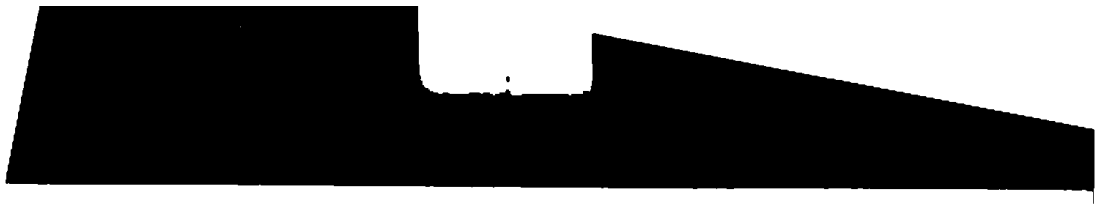
Oxford and Cambridge, and contrast it with the maximum of academic knowledge gained by a student who graduates *summa cum laude* at Harvard. And here we cannot too strongly emphasize the fact that those who read for honors in England have almost nothing in common except local propinquity and the preliminary examination called responsions with those who are satisfied with a pass degree. Those who succeed in winning honors, or who are "classed," as it is called, correspond to the Mandarins in the Chinese educational system; while they who fail to figure in the class list at all, but have at least pursued the more rigorous course of training, represent the *literati*, and look with something like contempt on a pass-man's humble achievements. As we

id, or six with the Eclogues and Geor-
, Demosthenes (De Corona), Cicero (say,
1 Philippics, with Part V. of Watson's
:t Epistles), and Æschylus or Sopho-
(three or four plays). The books of-
l must be got up with the utmost thor-
ıness; and that a much wider acquaint-
with classical literature than they de-
is really essential, may be inferred from
fact that the candidate is expected to
ılate, at sight, passages from Greek and
1 authors not included in his scheme.
:over, the questions propounded bear
merely upon grammar, but upon the
:nts, style, and literary history of the
:s presented. The student must write
1 prose, not only with accuracy, but

composition papers. We may add that, like the pass-man, the honor-man must satisfy the moderators as to his proficiency in the Greek text of the four Gospels.

We turn now to the most important public examination, or so-called "Greats," and inquire what further classical attainments must be exhibited by those who would be classed in the school of Literæ Humaniores. In general, this examination may be said to cover the Greek and Latin languages and the histories of ancient Greece and Rome, together with logic, and the outlines of moral and political philosophy. All candidates are expected to evince not only a thorough critical mastery of the particular Greek and Latin subjects offered by them for rigorous examination, but to translate

itus, and Terence, and Rebbeck's
ragments, with the History of Ro-
erature before Lucretius; Greek
ding the expositions of Pausanias
y; Egyptian History to the Per-
quest, comparing Herodotus, Di-
nd the Fragments of Manetho;
ography and Races of Ancient
subject demanding an acquaint-
h the remains of the early Italian
; and, finally, the Philosophy of
tics, Heracliteans, and Megarians,
Theætetus and Sophist of Plato.
e thoroughness and ability with
ese special themes are handled, it
us at Oxford that no man can se-
st in "Greats" whose scholarship



examination corresponding to the Oxford Moderations, and that the final examination for the classical Tripos (analogous to Greats) is less adequate as a test of general acquisitions and original capacity, though more strict in the requirement of technical facility in the production of Latin and Greek verse. On the qualifications for honors in the classics at the London University we need not at present dwell, both because they are inferior both in scope and rigor, and because the whole scheme and function of that institution is so different from that of the elder universities as to require a separate examination.

Let us turn now to the Harvard catalogue, and ascertain the largest possible acquisitions within the reach of the most student, remarking that th

...... These comprised,
... the academic year 1878–'79, two
plays of Terence and one of Plautus; two
philosophical tracts and selections from the
orations and epistles of Cicero; the Satires
and Epistles of Horace; the Annals; the
Germania and Agricola of Tacitus; and
two books of Quintilian, together with Lu-
cretius, Catullus, Juvenal, and Suetonius.
So much for Latin; and the year's lectures
n Greek will be found to cover a nearly
qual area. They include part of the Iliad,
bout a third of Thucydides, parts of Po-
bius, and the Anabasis of Arrian; two
ays of Æschylus, three of Sophocles, and
o of Aristophanes; the Ph...

upon certain specified authors is necessarily supplemented by a wide, general knowledge. Whatever may be said for or against the practice of writing Greek and Latin verse at sight, it obviously implies a very large command over the resources of a language. Indeed, its value as a test of scholarship is attested by the fact that those candidates at Oxford who are not equal to the *tour de force* of dashing off correct elegiacs and sapphics in a dead language, are practically required to take in the entire corpus of the Greek and Latin literatures instead.

On the whole, we must conclude that a first class at Oxford represents considerably more, both as regards comprehensiveness and thoroughness, than the maximum attainments in the same direction at present se-

ıpparently quite equal in range
ı to those enforced by the Uni-
ıdon; nor can our preliminary
contested that the possession
l diploma means more work
:omplishment than is signified
degree of Bachelor of Arts se-
ɜ-men at Oxford or Cambridge.

II.

Y EDUCATION IN SCOTLAND.

st parallel to American colle-
tions, as regards the scheme

result is that the standard of profi
is lower than obtains in Yale and Ha
The fact will at once appear upon a
at the requirements for an academ
gree set forth in the calendars nov
lished by the Universities of Edin
Glasgow, and Aberdeen.

We may premise that students en
in the regular way are subjected to n
lic test whatever by any of these i
tions (with the exception of Abe
either upon matriculation or at any
of the four years' course, until the fi
amination for a Master's diploma. V
a Master's diploma, because the deg
B.A. is not conferred by any of the

ew the regulations for pass or class,
decidedly below the present Harvard
, though it answers well enough to
measure of attainment exacted at the
r seminary half a century ago.
et us begin with Edinburgh, whose uni-
ity, toward the end of the last century,
during the first quarter of the present,
distinguished for its chairs of meta-
sics and moral philosophy. Here, how-
, as in the other cases, both for the sake
revity and convenience of comparison,
shall confine ourselves to the classical
artment known in Scotland as the "hu-
ities." A pass examination in this
ch for a Master's degree includes mere-

with some general notions of Roman and Hellenic history and of the laws of prosody, is positively all that is required for a Master's degree. We speak, probably, within bounds when we say that a candidate whose acquirements went no farther could not at the present day even matriculate at Harvard. If we turn, however, to the examination for graduation in arts with honors, we encounter a much higher standard. Thus, in Latin, the candidate must offer three plays of Plautus, three books of Lucretius, seven books of the Annals of Tacitus, the Satires of Horace and of Persius, and five Satires of Juvenal, with a considerable proportion of Cicero's Epistles. In Greek, he must take in seven books of the Iliad, one play of Æschylus and one of Aristophanes, three books of Thucydides, five books of Plato's Republic, and four books of Aris-

e acquisitions demanded for entrance
prescribed during the freshman year
Harvard, supplemented by the studies
rsued by those sophomores who elect to
ıtinue Latin and Greek throughout their
ır.

At Glasgow the amount of acquirement
vered by an ordinary degree is ridicu-
ısly small, and there are few second-rate
leges in this country that would accept
as a passport to admission. The appli-
ıt for the certificate of Master of Arts at
asgow is asked to furnish merely one
ok of the Æneid, one book of Livy,
th one book of Horace's Odes, and one
ok of his Epistles; seven hundred and
y lines of the Iliad, a single play of
phocles. and one book of Herodotus.

chylus, and two of Sophocles or Euripides, four books of Thucydides, and either two Dialogues of Plato, or an equivalent amount of Aristotle. It will be observed that rather more is implied by a first-class at Glasgow than at Edinburgh, though we observe that at the former place applicants for second-class honors need profess only one-half of the authors prescribed above.

We come finally to the University of Aberdeen, compounded by act of Parliament in 1868 of King's College and Marischal College, each of which previously exercised university functions. We may here call to mind the fact that Aberdeen and Glasgow Universities are together entitled to a representative in Parliament, the same privilege belonging to Edinburgh and St. Andrews conjointly. It is worth noting that at Aberdeen an intermediate examination is required for passing from the junior

ne book of Horace's Odes, one book
vy, one book of the Iliad, and one
enophon's Memorabilia. About as
more is required at a final examina-
or a pass degree, viz., a second book
ivy, one Oration of Cicero, and a
of the Æneid, a single play of Eu-
s, a book of the Odyssey, and a
of Thucydides. Here the case is
what better than at Glasgow, though
hole acquirements are scarcely supe-
o the amount expected for matricula-
at Harvard. On the other hand, the
cts prescribed for classical honors at
deen one year hence (April, 1881) will
e following: Two plays of Plautus,
atires of Juvenal, three books of the
ls of Tacitus and Cicero's philo-

covered by the Harvard student who as elected Greek and Latin during his ophomore year.

Such is the measure of proficiency in this department demanded or encouraged by the three Scottish institutions named; and doubtless a like state of things would be discovered at St. Andrews if data were at hand for comparing the regulations of that ancient university. But the reader must bear in mind that we have here confined ourselves to the single matter of classical attainments. The strong point of Scottish universities, and especially of Edinburgh and Glasgow, must be sought in a different direction, namely, in the field of ethical and metaphysical research. Here, for upward of a century, they have known no rival among the academic establishments of the United Kingdom, and th day is not long past when attendance c lectures of Sir William Hamilton w ntial part of a first-rate e

III.

IATICAL AND PHYSICAL SCIENCE AT)RD, CAMBRIDGE, AND HARVARD.

are quite as apt to underrate the to which science figures in the cur- . of an English university as we are -estimate the classical acquirements ıted by its simple degree. It is, of well known that the study of mathe- ıas long been invested with supreme ershadowing importance at Cam- and that to win the highest place.

ural sciences, and how considerable a proportion of the hard-working students now seek academical honors in this field. It may prove interesting and suggestive to compare the amount of work demanded of honor-men in mathematics or in physical science at the older English universities, with the maximum exacted of an American student essaying to graduate with credit in the same subjects at Harvard College.

The mathematical tripos examination at Cambridge occupies nine days, the first three being assigned to the more elementary portions of mathematics and natural philosophy, and the fourth to the easier

of analytical geometry: Arithmetic, and
the elementary parts of algebra, including

of chances; a third division is concerned with the ninth and eleventh sections of Newton's Principia, Book I., with lunar and planetary theories, the higher parts of dynamics and Laplace's coefficients, with attractions, the figure of the earth, and precession and nutation; in the fourth division are classed hydrodynamics, physical optics, waves and tides, the vibrations of strings and bars, the theory of elastic solids treated as continuous, and the theory of sound; finally, the fifth division of subjects includes heat, electricity, magnetism, and the expression of arbitrary functions by series or integrals involving sines or *cosines. In each* branch and sub-branch

of work the examination at Cambrid
searching and rigorous, and no man
is not proficient in the whole circu
study can hope to see his name ev
the class of senior optimes, much less i
list of wranglers. We may add that,
January, 1882, the wranglers will be
jected to a separate trial some six m
after the general examination, in ord
settle the order of precedence among t
selves.

The field of mathematical labor a
ford is clearly outlined in this year'
endar. At this university a student
twice obtain honors in mathematics, v
moderations, as the intermediate inve
tion is called, and again at the final e
ination corresponding to the Camb

differential and the integral calculus, finite differences, the calculus of variations, and the theory of chances. So much for pure mathematics: as regards mixed mathematics, the student must exhibit a thorough acquaintance with the mechanics of solid and fluid bodies; with geometrical and physical optics; with the first three sections, and parts of sections nine and eleven, of Newton's Principia, Book I., and with astronomy, including the elementary parts of the lunar and planetary theories. A brief survey of these data will demonstrate that the scope of study requisite for the highest honors in mathematics is considerably wider at Cambridge than at Oxford, notwithstanding the growing prestige [illegible] years has attached to such

secured a first class in mathematics at Oxford; whereas Oxonians, reputed mathematicians of high promise, have failed to win anything better at the rival seat of learning than the rank of senior optime, or, at all events, a low place in the list of wranglers.

Let us now look very briefly at the maximum of mathematical proficiency required of the Harvard undergraduate who elects to continue this branch of study throughout his course, and aims to gain special credit in it. In his freshman year he will have acquired an acquaintance with the whole of algebra, with solid geometry, analytic geometry, including conic sections, and with plane trigonometry. We will now suppose that he is able to compass in the next three years an amount of work

tions including determinants, modern methods in analytic geometry, and, finally, descriptive geometry and perspective. This measure of accomplishment, chiefly in the domain of pure mathematics, may be supplemented by the elements of mathematical physics, of astronomy, optics, and acoustics. That such a curriculum falls short of the ground traversed in the Cambridge tripos is obvious enough, and it may be affirmed with confidence that the criteria imposed on candidates for mathematical honors are far inferior in point of rigor. On the other hand, we think that, both in comprehensiveness and thoroughness, the mathematical acquisitions of those Harvard men who elect that field of labor, and graduate with special reputation on that score will soon

glish universities. As might have been pected, in view of the greater prominence en to mathematics at Cambridge, the first p was taken there, the example, however, ng followed by Oxford two years later, in 1853. That rather more attention is d to this line of work, or that, at all nts, a larger proportion of students are mpted to undertake it at the former t of learning, is indicated by the some- at greater number of names classed in natural science tripos at Cambridge. nether the course of study, however, is tally wide and searching, it is difficult say, owing to the somewhat defective l indefinite data supplied in the calen- last published. It appears that the ex- ination for honors in this department at

subjects covered are: Chemistry and certain other branches of physics; botany, including vegetable anatomy and physiology; geology, comprehending paleontology and petrology; mineralogy, zoology, and comparative anatomy, including human anatomy and physiology. The questions on all these topics are, however, at this stage, of a relatively elementary character, and such as to gauge a knowledge of principles rather than of details. The second and decisive part of the examination for this tripos takes place six months later, and occupies five days or more. Here the papers set take a wider range, and include a larger number of questions on the several themes, queries having particular reference to and history of those sub- while regard is ability, a

zoology, and comparative anatomy, human anatomy, and physiology; fourth, geology, including paleontology and petrology. The Board of Examiners, we are told, does not think it desirable at present to define the range of the questions to be set in the second part of the examination. It appears, however, that, in estimating knowledge of any one subject, account is taken of so much of the others as is cognate or subsidiary to it. Mention is made of the subject, or subjects, for knowledge whereof a student is placed in the first class; and marks are placed, the grounds for them being stated, against the names of men specially distinguished either by general knowledge and ability, or by special proficiency in any one of the four branches before men-

to pass a preliminary examination, which precedes, not by six months, as at Cambridge, but only by seven days, the ultimate and exacting trial. This initial inquest, however, is restricted to the more elementary parts of mechanics and physics, and of chemistry, together with a practical exhibition of familiarity with simple processes in the latter subject at least. In the final honor examination a candidate may offer himself in one or more of the three general subjects of physics, chemistry, and biology. But he is also expected to take in some special subject as supplementary to his main work, and in which he invites exhaustive scrutiny. Such topics are crystallography and mineralogy; the former as included under the general subjects of physics and chemistry; the latter as belonging under chemistry. And again, paleontolo-

the examinations in this school. Thus, candidates who offer themselves in chemistry are subjected to practical tests in the qualitative and quantitative analysis of inorganic substances. So, too, in biology, the student is expected to give evidence of being competent not merely to verify and describe specimens already prepared for the naked eye or microscopic demonstration, but also to prepare such, or similar specimens, himself. We observe that Jamin's Cours de Physique is recommended as the text-book on general physics, and that in the list of treatises employed in preparing for the examination in biology, a large proportion are in the German and French languages.

For the purpose of referring the above proofs of proficiency in the natural sciences to some familiar standard, let us contrast them with the amount of work expected from the Harvard student who elects to pursue corresponding lines of study throughout his academic career. During his freshman *year he is* called upon to make him-

self conversant with Deschanel's Manual of Natural Philosophy, and to attend twenty-four lectures on elementary chemistry. Thereafter, if he devote himself particularly to physics, he will attend lectures in astronomy, optics, and acoustics, on the undulatory theory of light, electricity, and magnetism, the spectroscope and its applications, thermo-dynamics and thermics, including the applications of heat. He will also have practical exercises in the laboratory, including the use of instruments of precision in testing the laws of mechanics, acoustics, optics, magnetism, and electricity, with an extended course in electrical measurements. If, on the other hand, he choos

himself specially to chemistry, h

imental chemistry, and study, at first crystallography and the physics of ıls, and likewise the carbon com- ls, theoretical and experimental. Fi- if the tastes of the undergraduate ıim in the direction of biology or nat- history, he will find himself directed ıssisted by no less than eight profess- ı the several sub-branches of zoology, ntology, comparative anatomy and ology, entomology and botany, lect- in each case being supplemented by atory practice and field-work. More- since the term natural history is broad- ın biology, the student who elects this e will be expected to show acquaint- with physical geography, and with tural and economic geology. As to

est commendation. It seems clear, however, that the scope of inquiry embraced at the American college under the three main branches of natural science is quite as extensive as that outlined for candidates in the corresponding honor-schools of Oxford and Cambridge.

IV.

THE STUDY OF PHILOSOPHY AT SCOTCH UNIVERSITIES.

An outline of the training supplied by Scottish universities, which should fail to mark the dominant place assigned to mental science in their curricula, would be as unfair and inadequate as an omission of

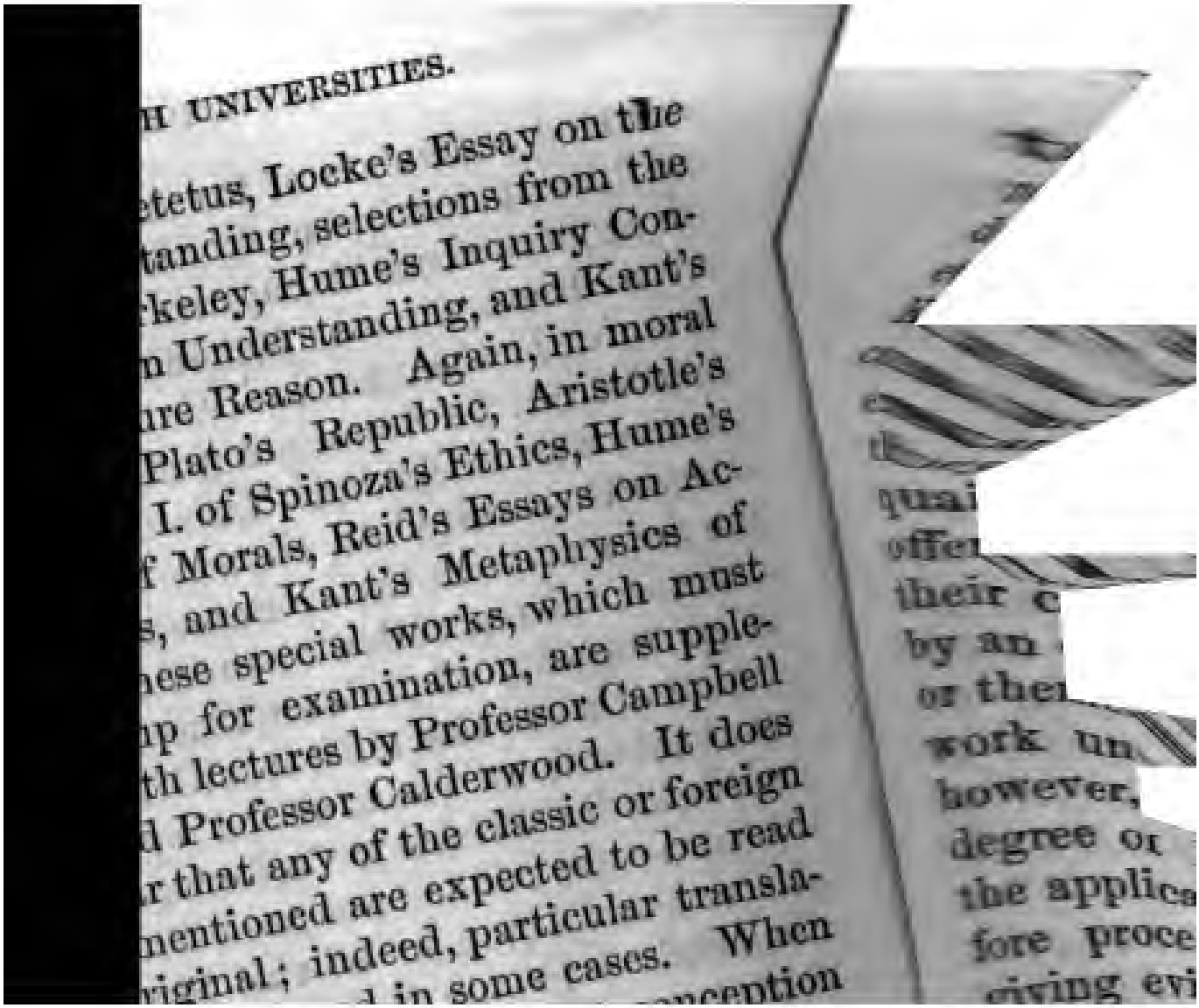
wide themes embraced under the collective name of philosophy have long evoked, and still receive, the most strenuous and fruitful attention in the seats of learning north of the Tweed. Where such a distinction in the fields of labor severally cultivated is sharply accented and generally recognized, we should expect to see heed paid to it in the practice of students; to find, for example, Scottish graduates aiming to perfect their knowledge of the classics at an English university, and, on the other hand, an English B.A. journeying northward to attend a course of ethics and metaphysics. This is just what has taken place for upward of a century, and, to some extent, the custom continues to this day. It is more than two hundred years, indeed, since the so-called Snell exhibitions were

t tempting prizes for classical
h the gift of the Scottish uni-
is worth noting that among
Scotchmen who have thus pro-
n Glasgow to Oxford are Adam
n Wilson, and Sir William Ham-
it is a significant fact that each
n his return to Scotland, signally
ed to start an inverse current of
, and to clothe the northern uni-
with superlative prestige and un-
attraction in the field of philo-
inquiry. It would be vain to
England among their contempora-
names like those of Adam Smith
homas Reid, who lectured at Glas-
or like those of Dugald Stewart,
as Brown, and Sir William Hamilton,
uccessively filled at Edinburgh the
Philosophy.

iversities a

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existing *regime;* and for that reason, afl
marking the scope of acquirements look
for at Edinburgh and Glasgow, we shall
fer to the analogous programme put for
by the American university. To begin wi
Edinburgh, we would point out that a n
feature has lately been introduced by t
authorities, designed, apparently, to fav
the influx of graduates from English u
versities. In addition to the honor cou
in philosophy, whose certificate of first
second class carries with it an M.A. degr
there is now an examination open to
graduates of British or colonial univer
ties who have resided a year at Edinburg
The successful passing of this test entit
a candidate to the degree of Doctor
Mental Science there being no Bachelo

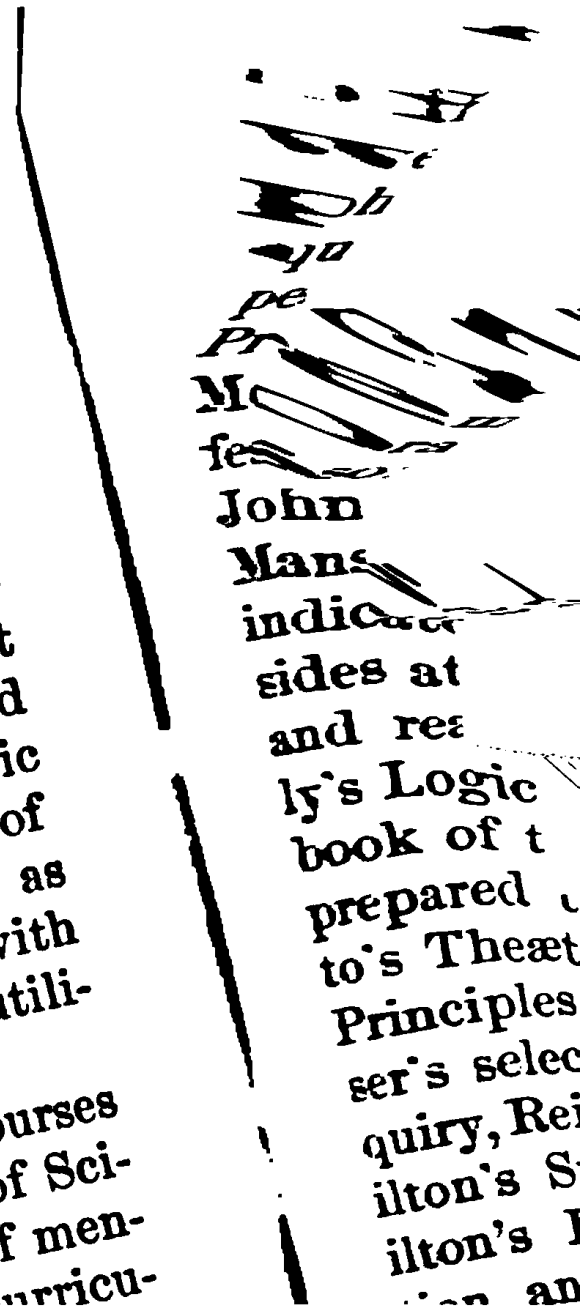

H UNIVERSITIES.
etetus, Locke's Essay on the
tanding, selections from the
keley, Hume's Inquiry Con-
n Understanding, and Kant's
ure Reason. Again, in moral
Plato's Republic, Aristotle's
I. of Spinoza's Ethics, Hume's
f Morals, Reid's Essays on Ac-
s, and Kant's Metaphysics of
hese special works, which must
p for examination, are supple-
th lectures by Professor Campbell
d Professor Calderwood. It does
r that any of the classic or foreign
mentioned are expected to be read
riginal; indeed, particular transla-
in some cases. When
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however,
degree or
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ett's Plato, or on Mahaffy's version of Kant's Prolegomena. We observe that candidates for honors in philosophy at the examinations for an M.A. degree, while they are required to show a thorough acquaintance with the contents of the books offered, are not called upon to demonstrate their capacity of philosophical speculation by an original disquisition, although essays or themes form a part of the regular classwork under Professor Calderwood. It is, however, one of the tests prescribed for the degree of Doctor in Mental Science that the applicant shall present, one month before proceeding to examination, a thesis

For example, in for-
te must exhibit an in-
with the theory and de-
al and syllogistic forms,
larly, their recent devel-
Morgan and Boole. So,
of ethics he must be con-
with the Platonic system
the Republic and the Ar-
ulated in the Ethics, but
Socratic conceptions jotted
Memorabilia; with the Stoic
n theories; the systems of
worth, Price, and Hume, as
noza and Kant, together with
olutions of intuitional and utili-

s.

w the three alternative courses
the degree of Bachelor of Sci-
department of men-
curricu-



offer himself for examination. One of these, we need not say, comprehends logic, metaphysics, and ethics, and the breadth of acquirement called for is what we should expect from the reputation of the university. Premising that the occupant of the chair of Moral Philosophy is the well-known Professor Caird, while the Professor of Logic is John Veitch, who edited, in connection with Mansell, the works of Hamilton, we will indicate very briefly the range of study. Besides attending Professor Veitch's lectures, and reading Books II. and III. of Whately's Logic, which seems to be the sole textbook of the pass-man, honor-men must be prepared to undergo examination in Plato's Thcætetus, in Descartes's Method [illegible] Principles of Philosophy [illegible]

ance with the general principles and m
ods of Fichte, Schelling, and Hegel, w
questions will be set relating to Thoms
Outline of the Laws of Thought, to M
Logic, and to Hamilton's Lectures on I
ic. So much for the task performed ur
the oversight of Professor Veitch. In
branch of work directed by Professor Ca
who, by-the-way, has lately lectured
Hegel's Encyclopædie, the candidate
honors is required to show an accu
knowledge of Plato's Republic, Aristo
Ethics, and Kant's Critique of Pract
Reason; and he is further expected to st
such works as Spinoza's Ethics, Mai
Ancient Law, Green's Hume, Sidgwi
Methods of Ethics, together with He
as translated by Dr Sterling and Mr V

inal essay is demanded at Glasgow from a candidate for honors in the department of mental science, and this will be esteemed by most persons familiar with examinations a very grave omission. We cannot doubt that such a test of native ability and real mastery over extensive materials, were it regularly applied, would have been mentioned in the calendar. As we have seen, the Edinburgh authorities lay much stress upon this feature in their requisites for the degree of Doctor in Mental Science. It will be noticed with surprise that neither at Edinburgh nor Glasgow does the study of political economy figure in the school of philosophy. The reader will naturally presume that this subject is taken up in some other department—in connection with history for example: but the astonishing fact

ly devoted to this science; but a vigilant scrutiny fails to detect the faintest allusion to it among the topics prescribed in the several fields of study. The state of things at Glasgow is even more extraordinary. It is now more than a century since the Wealth of Nations saw the light, yet to this day the university, whose brightest ornament is the name of Adam Smith, remains without a chair of Political Economy.

At Harvard, we infer, from the statistics printed in the last president's report, that rather a larger proportion of each class elects to follow the course of philosophy than the alternative courses of history, or of the classics. We observe, too, that in 1878, while only two graduates obtained honors in history, and only four in the classics, no less than six secured equivalent distinctions in philosophy. In order to define the extent and nature of the work done in this field, we must add to certain prescribed text-books in mental science *the seven elective* series of lectures, which,

in a given year, are attended mainly by the senior and junior classes, premising that an estimate based upon these data is likely to be rather below than above the truth, since a student may, at his own option, attend philosophical lectures in his sophomore, or even in his freshman year. The prescribed text-books to which we have referred are Jevons's Logic and Locke's Essay on the Human Understanding. Those, however, who seek honors in philosophy are expected to master the history of philosophy from Aristotle to our own day, and are assisted in different subdivisions of their work by not less than six professors. With the aid of Professor Palmer, for instance, they acquire some acquaintance with Descartes, with Malebranche, with Berkeley, and with Hume. In connection with Professor Bowen's lectures, they take up Kant's Critique of Pure Reason, Schwegler's History of Modern Philosophy, Bouillier (Histoire de la Philosophie Cartésienne), Schopenhauer (Die Welt als Wille und Vorstellung), and Hartmann (Philoso-

phie des Unbewussten). The last three authors, by-the-way, are read in the original at Harvard, on the ground, apparently, that students who expect to do much with philosophy may at least take the trouble to learn the French and German languages. Under Professor James, the student will take up the subject of psychology; and we note that one of the text-books of this course is Taine on Intelligence. With Professor Peabody he enters upon the study of ethics, the works specially mentioned in the schedule for the year 1878 being Grote's Treatise on the Moral Ideals and Cicero de Officiis. We may say here that the candidate for honors in mental science would doubtless avail himself of Professor Anderson's lectures on Greek Philosophy, and make himself thoroughly acquainted either in the original Greek, or through the medium of translation, with the contents of Plato's Republic and Aristotle's Ethics. At Harvard, too, political economy is an essential feature of the philosophical course. *The works named* for examination are Mill's

itical Economy, Bagehot's Lombard eet, Cairnes's Leading Principles of Po- cal Economy, McKean's Condensation Carey's Social Science; and the stu- it is further called upon to exhibit a rough and critical knowledge of the ncial legislation of the United States. regards the last-named element of her losophical course, viz., the considerable ce assigned to political economy, it can- be denied that Harvard compares most orably with Edinburgh and Glasgow. d although the Scottish universities are ely to retain for some time their well- ned pre-eminence in ethics and meta- sics, a candid survey of the data above d will indicate that the American col- e has already reached an honorable ndard, and is rapidly expanding the uit of acquirement in her school of losophy.

V.

MENTAL SCIENCE AT CAMBRIDGE AND OXFORD.

It must not be supposed, because the study of philosophy has long been pursued with peculiar earnestness and success in Scotland, that it is now neglected in the reconstructed schemes of instruction at Oxford and at Cambridge. From the time of the schoolmen, indeed, logic, if not the cognate subjects of ethics and metaphysics had been a capital and sometimes the

putably large. At Cambridge, on the other hand, where formerly the study of logic and of metaphysical speculation was entirely sacrificed to mathematics, a signal change was effected some thirty years ago, and a distinct school of honors in this once slighted province was made a normal feature of the curriculum. It may prove interesting and suggestive to contrast the range and direction of the attainments demanded of the Cambridge undergraduate, who prefers this field of labor, with the programmes above outlined of Glasgow, Edinburgh, and Harvard.

It was in 1851 that a school of so-called Moral Science was established at Cam-

been few, numbering no more than two or three in certain years; but of late there has been a decided, though intermittent, improvement. How many pass-men elect to run the gauntlet of this tripos we have no means of learning from the calendar, which has very little to say regarding this obscure section of the undergraduate world. The examination for honors occupies six days, and the questions are partly of a special kind, having reference to text-books on particular subjects, and partly of a general kind, relating to the subjects themselves. The latter inquiries, giving scope to original analysis and research, usually take the form of theses for essays.

The subjects with which a candidate for honors must exhibit a minute acquaintance

of these four subjects, he is not precluded from obtaining a place rst class. Passing to details, we hat in the province of logic the text-books are recommended be- elementary treatises of Aldrich tely: Kant's Logic, Mansel's Pro- Logica, Hamilton's Lectures on Morgan's Formal Logic, Boole's hought, Bacon's Novum Organum, 's Novum Organon Renovatum, gic, and Venn's Logic of Chance. l philosophy the work prescribed qually comprehensive aspect; it for instance, Descartes's Method itations Locke's Essay on the Hu-

Psychology, and Calderwood's Philosophy of the Infinite. It will be observed that in this schedule, while it offers a tolerably wide conspectus of metaphysical research, there are some notable omissions—for example, Spinoza, Fichte, and Hegel, and the most recent German school, represented by Schopenhauer and Hartmann. Under the general head of moral and political philosophy, a wide range of reading is looked for from the candidate. The list of authors comprehends the several theories of morals developed in Plato's Protagoras, Gorgias, Philetus, and Republic, in Aristotle's Ethics, and in Cicero's tract De Finibus; the remarkable system constructed by Hobbes in his Leviathan, and the Moral Sentiments of Adam Smith, in which that author anticipated Herbert Spencer in making sympathy the basis of morality. The applicant for a first class in this tripos must also show himself familiar with Shaftesbury's Inquiry concerning Virtue, Hume's Inquiry into the Principles of Morals, Kant's Groundwork *of the Metaphysic* of Ethics; and likewise

h Clarke's Evidences of Natural Relig-
with Bishop Butler's Sermons, with
ey's Moral Philosophy. In connection
h this subject he must take up, further,
tham's Principles of Morals and Leg-
tion and Principles of the Civil Code,
ewell's Lectures on Systematic Morali-
and Lectures on the History of Moral
losophy; and, finally, Mill's Utilitarian-
and Representative Government, to-
ner with Grote's Examination of Utilita-
ism. Here, again, we note as a strange
ssion in a scheme of ethical survey oth-
ise quite complete, the non-reference to
openhauer's Philosophy of the Will.
neglect seems the more singular from
attention paid to Hobbes, the great ex-
nder of Pessimism in the seventeenth
tury. We come lastly to political econ-

thoritative teachers, the candidate for honors is required to apply their principles and methods to various practical subjects, such as industrial education, co-operation, trade combinations, public and private charity, the limits to the economic intervention of government, and the relation of political economy to other branches of social science and to ethics. Among the text-books recommended on this subject may be mentioned The Wealth of Nations, Ricardo's Principles of Political Economy and Taxation, Bastiat's Essays, Jones's Political Economy (Whewell's edition), J. S. Mill's Political Economy and Essays on Unsettled Questions, Fawcett's Manual, Thornton's Treatise on Labor, Bagehot's Lombard Street, Cairnes's Leading Principles, Leone Levi's History of British Commerce, and Brentano's History of Guilds. We may note further that, recently, the candidate ha
been directed to bestow special attentio
historical development of the exis
and competition, a
of Co

munism and Socialism. It is much to the credit of Cambridge that her authorities have declined to treat the last-named subjects with supercilious indifference, and that they have awakened to the fact that the fundamental premises of Adam Smith and Ricardo are questioned, and the application of their conclusions to legislation rejected, by eminent professors in some of the German universities.

Although no special school of honors in philosophy exists, as we have said, at Oxford, yet great stress is laid on proficiency in mental science by the examiners of those applicants for a B.A. degree who desire to rank in the class list. This was the traditional attitude of the university when Adam Smith and William Hamil-

for his degree he not only took with him into the schools all the prescribed text-books of the day, but in mental science professed all the works extant in Greek and Roman philosophy, including the whole of Aristotle, all of Plato, the Neo-Platonists, Proclus and Plotinus, and all the fragments of the earlier and later philosophical doctrines preserved by Laertius, Stobæus, and the other collectors. In fourteen of his books on Greek philosophy he was not questioned at all, these being declared by the masters too abstrusely metaphysical for examination, the fact doubtless being that they were unacquainted with their contents.

We need not say that the scope of investigation in mental science called for from

nian who aims at a first-class in "Greats" —that is to say, at the final examination in Literæ Humaniories—must exhibit, in addition to his attainments in the classics and history (outlined in a previous chapter), a thorough knowledge of logic, as well as of the outlines of moral and political philosophy. On the first topic, questions are set in Trendelenburg's Elements of the Aristotelian Logic, and in Bacon's Novum Organum, and the candidate is expected to discuss the nature and origin of logic and the relation of language to thought, and to explain the theory of the syllogism, the methods of the different sciences, and the principles of historical evidence. The text-books named in philosophy are Pla- Republic, together with his Protagoras, Books III., VII., and

thetic and Analytic in Kant's Critique of the Pure Reason, with portions of his Critique of the Practical Reason. We should mention that it is not compulsory for candidates to offer more than one book of Plato and one of Aristotle, and that Kant may be read in an English translation.

Under the head of political philosophy no text-books are specified, but the classman is expected to be conversant with the leading principles of political economy, and to have studied, historically, the origin and growth of society, the evolution of political institutions and forms of government, with a somewhat narrow reference, however, to Greece and Rome, and, finally, the sphere and duties of government. In this department the Oxford undergraduate was

Kant's Critique of
portions of his Cri-
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V

THE STUDY OF HISTO
BRIDGE, AN

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viz., philosophy te
that, especially un

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propose to indicate what has bee
Oxford and Cambridge for this l
learning, and to compare the r
vance of Harvard College in the
rection.

We need not say that due atte
always been paid at Oxford to tl
of Greece and Rome, down, at all
the dissolution of the Western Rc
pire, in the final examinations fo
honors. To some extent, the same
might be made of Cambridge, tho
less heed was given to the comp
survey of ancient life and thougl
technical linguistic proficiency. \

been open to the undergraduate to plan his work with the controlling aim of taking honors in the separate school of modern history. The scheme proved so popular, and had such satisfactory results, that the example was followed, though tardily, by Cambridge. It was in 1870 that the latter university first assigned a moiety of the curriculum of its school of law to historical studies, and it was only in 1875 that a distinct and co-ordinate historical tripos was founded, mainly through the influence of Professor Seeley.

Let us see now what is expected of those who offer themselves for honors in the school of history at Oxford. In the first place, candidates must be prepared to sustain an examination in the history of England from [illegible] accounts transmitted by the

English History, Lingard's History of England from Henry II., and Ranke's English History. For the Hanoverian epoch no particular books are recommended, but candidates are required to supplement their study of Hallam and May by an adequate knowledge of the political movement of the period. We may add that this branch of the examination is understood to include the social and literary history, as well as a review of the growth of the English colonies and dependencies. So much for the measure of acquaintance with the national annals requisite for a first class in the honour school of history at Oxford. In the next place, a candidate must take in some period of general history to be read in the modern writers. For example, the centuries intervening between the decline (A.D. 476) and the

exacting part of the work demanded. The aspirant for high honors must also offer a special portion of history, studied not in modern historians, but in the original authorities, and upon which he is expected to write an essay verifying, supplementing, or revising the received opinions. Among such specific subjects may be cited the age of Charles the Great, as portrayed by Eginhard and other contemporary chroniclers, and by the documents included in Jaffé's Monumenta Carolina; or, the Age of Louis XI. and Charles VIII., as disclosed by Philippe de Comines, Villeneuve, and Machiavelli. There is an additional acquirement optional with candidates, but usually mastered by those who desire to make sure of a first class. This is a subject or period, not of history proper, but of literature; and

of Molière; or, thirdly, the age of Dante, comprehending a minute study of the Purgatorio. Besides these lines of work in the domain of social, political, and literary history, all candidates are required to exhibit an acquaintance with the outlines of political economy, of constitutional law, and of political and descriptive geography. The subject of political economy may be read in Adam Smith's Wealth of Nations or in Mill's Principles; but the student is expected to trace the working of economic principles in all the history he offers. In view of all these regulations, it seems clear that the attainments demanded for graduation with distinction in the school of his-



ng to Cambridge, we find that as
ool of history was opened later, so
ge of work is, as yet, more circum-
. It appears that in the examina-
r the historical tripos, one paper is
d to each of four special subjects
lly selected from ancient, mediæval,
n, and English history. Premising
ncient history is necessarily included
requirements of this school at Cam-
, owing to the relatively slight at-
1 given it in the classical tripos, we
roceed to mark in more detail the
and nature of the research expected.
'n for instance, the candidate must
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cases some knowledge of the chief original authorities will be called for, we are told, though, from the fact that none of them are specified, we infer that this rule is not rigorously enforced. We should add, that the candidate must evince some knowledge of the principles of political philosophy and general jurisprudence, of political economy and economic history, of constitutional law and constitutional history, and of public international law in connection with the treaties studied. As to these latter subjects, a number of works are recommended, including the treatises of several German publicists, but only such, however—and this is a significant fact—as are accessible in French versions. On the whole, as we have said, the Cambridge classical tripos seems to be sensibly below the standquirement maintained in the Oxhistory, though it is made

tion one other regulation which prevails at Cambridge, and which is calculated to attract a good many undergraduates to this field of study, viz., that all students who pass the examination for the historical tripos are *ipso facto* entitled, without further work of any kind, to admission to the degree of Bachelor of Arts.

Let us see now what course of study is outlined at Harvard for those students who elect to bestow most of their labors on historical research. We may mention that a considerable fraction of each class prefers to pursue this branch of learning, and that, in 1878, two graduates gained honors in history against four who carried off a like distinction in classics. It appears that a historical groundwork is secured in the

of optional lectures, representing so many specific fields of study; and we take for granted that all of these, or their equivalents, are attended, in the span of his academical career, by the aspirant after historical honors. In the year 1877–'78, according to the president's report, these lines of inquiry covered—Roman constitutional history to the reign of Diocletian; the general history of Europe from the tenth to the sixteenth century, with an advanced course of lectures on mediæval institutions; the general history of Europe from the middle of the eighteenth century, and the constitutional and legal history of England to the seventeenth century. This range of work was supplemented by the

and the elements of public international law. Such is the scope of acquisition open to the candidate for honors in history at Harvard. When we bear in mind, moreover, that his proficiency is subjected not only to a strict final examination, but also to repeated intermediate tests, we cannot but think his attainments will be found equal, if not superior, to those of a first-class man in the Cambridge historical tripos. A close scrutiny, on the other hand, of the data here collected leads to the conclusion that the Harvard man who graduates with honors in history is still somewhat behind the Oxonian who is credited with first-rate proficiency in the same field of learning.

VII.

MODERN LANGUAGES AT OXFORD AND CAMBRIDGE.

If we were asked to name the capital distinction in the schemes of academical training followed in Great Britain and the United States, we should point to the attention bestowed on modern languages at American colleges. The extent to which such studies are encouraged at Harvard, for example, will be best appreciated by contrast with the almost total neglect of them at the Scotch and English universities.

There is no such thing as a Professor-
[illegible]odern Languages at Edinburgh
[illegible] the slightest provision
[illegible] direction.

departments, without acquiring the rudiments of any living tongue except his own; neither are any opportunities of instruction open to him, should his tastes lead him toward the literatures of Continental Europe. The same thing must be said of Cambridge. Here, too, there is no professor or lecturer on these subjects, nor does any measure of acquaintance with them figure among the compulsory or optional requirements for any degree. So far as the scope of study is designated or suggested by prescribed or elective courses, the languages of modern Europe are ignored with a sovereign indifference, only explicable on the assumption that their acquisition by well-trained intellects is too facile to need

Italian are also designated among the
dies outlined for the "Examinations for
n and Women," recently instituted for
ose who are either incompetent or, for
rious reasons, indisposed to enter the
niversity. The attention given to modern
anguages in these extra academical in-
quiries, coupled with their complete omis-
sion from the collegiate schemes, seems to
imply, as we have said, that such studies
only need prescription and tuition in the
-ile feminine, or commercial
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quisite lines of inquiry without a knowl-
lge of two or three Continental languages.
s for the Semitic and Indian triposes, at
ast one-half of the commentaries and ex-
sitions composing the students' appara-
s are in the German language. What is
re said of triposes at Cambridge is true
a more limited extent of the examina-
ons for honors at Edinburgh and Glasgow.
hose students especially who seek a de-
ee of Master of Arts through the hon-
-school of philosophy would be naturally
pelled, though they are not constrained,
read certain authors in their original
rench and German.

The state of things at Oxford is slightly

no specific proof of attainments in these directions is demanded. In recent philosophy, in civil law, in modern history, subjects of study are laid down to which a knowledge of the classic tongues is not a more essential key than is an acquaintance with modern languages. In a word, the mastery of French and German is, in the case of honor-men in certain of the final schools, taken almost as much for granted as their proficiency in English orthography and syntax. We refer, of course, to the capacity of reading a foreign language. The power of speaking or writing it is, of course, gained by practice; and although useful [illegible] to a diplomatist or commercial [illegible] particular import to an

ford pass degree is compelled to include among his performances, at the second public examination, the display of an elementary acquaintance with French or German. This is the one overt recognition of the modern languages of Europe in any of the regular departments of the university, there being, we should add, no professorship or lectureship upon those subjects.

There is, nevertheless, at Oxford an ancillary and extra academical establishment known as the Taylor Institution, expressly founded for the encouragement of modern languages. There are connected with it four teacherships (in German, French, Italian, and Spanish respectively), each supported by a yearly stipend of $750 from the Taylor fund, augmented by a fee of $5

chester for the encouragement of the study of the Polish and other Sclavonic languages. Among the lectures recently delivered in conformity with this bequest, those of W. R. S. Ralston on Russian history and literature have been most noteworthy. We may mention further that the Taylor fund provides for two scholarships, each annually awarded for proficiency in one or more of the Western European languages. It is worth noting that one of the first men to secure a Taylor scholarship for his attainments in the mediæval literatures of France and Italy was Algernon Charles Swinburne.

It will be plain, from the data here collected, that the study of modern languages

which, after the freshman year, the student may apply himself, is exclusively concerned with the languages and literatures of Western Europe. It seems to us that Harvard is here guided by sounder principles than have inferentially governed the British universities. It is true enough that a smattering of French, Spanish, or of Italian sufficient to enable him to blunder through a newspaper, may be gained in a week by a first-rate Latin scholar; but an accurate knowledge of the structure and idiom of those tongues, and the appreciative reading of their higher literatures, are not to be compassed in such hasty and perfunctory fashion. As for German, strenuous and protracted work is required to master the

VIII.

THE SEMITIC AND INDIAN LANGUA ENGLISH AND SCOTCH UNIVERSI

THERE is one field of learning i the foremost of American colleges cidedly behind the academical inst of Great Britain. We refer to the tunity and encouragement afforded study of the Semitic group of lan and also of the Indian tongues, s which are purely Aryan, while otl made up of Semitic and Aryan el

tain-head of history, as to the business object of training young men for the dian civil service. So far as the last-na design is kept in view at Oxford, for ample, the department of Indian langu should be accounted rather a professi school than a true co-ordinate part of academical system.

At Oxford the study of Hebrew has l prosecuted for upward of three centu as a constituent part of the preparatio joined for degrees in divinity. The Re Professorship of Hebrew was founde King Henry VIII., and in 1876 was hel Dr. E. B. Pusey. There are also two Ar professorships — one established by A bishop Laud, and the other, known as Lord Almoner's, being of uncertain

from this source is about $5000, and paid to the well-known scholar, Mc Williams. Students of Sanscrit have further advantage of hearing the lect of Max Müller, who holds the Professor of Comparative Philology. With a finally of providing necessary instructi those undergraduates who intend to the Indian civil service, the university tioned, some twenty years ago, the ap ment of a teacher of the Hindostan guage, and also of an instructor in t ments of Hindoo and Mohammed This is all that Oxford has thus f for the study of the Semitic and languages, having been, as we s outstripped in these re

mar of that language is well known to students. Professor Wright lectures on Syriac and Ethiopic, as well as Arabic, and also on the comparative grammar of the Semitic languages. There is likewise a readership in Arabic, called the Lord Almoner's, and instituted in 1724, whose duties are at present performed by Mr. E. H. Palmer. Professor Palmer delivers elementary lectures in Arabic, Persian, and Hindostanee, with especial reference to candidates for the Semitic and Indian languages triposes. It is the erection of these departments of learning into co-ordinate parts of the academical scheme which especially distinguishes Cambridge from Oxford, as regards the treatment of these subjects. Since 1878, a student intending to graduate in arts with honors has been allowed to elect the

ac, and also of the comparative gra
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The regulations for the Indian tr
equally wide and rigorous. The e
tion extends over seven days, near
of which are devoted to Sanscrit.
paper, for instance, English passa
set for translation into Sanscrit; ir
the student is required to furnish a
lish version of excerpts from des
Sanscrit works, including a philos
treatise and a portion of the Rig V
gether with dramatic and other

mar and vocabulary, the student is, of course, expected to evince a considerable knowledge of Arabic grammar, with reference to the forms reproduced in Persian. Precisely the same thing may be said of the work prescribed in Hindostanee, except that special attention is here given to the directly practical object of acquiring a full vocabulary. Besides these special attainments, a candidate must exhibit a knowledge of the history of the Indian languages, literature, and philosophy, together with the comparative grammar of the Indo-Germanic languages, and he must be tolerably conversant with the laws either of Persian or of Sanscrit versification. We may here mention that an annual prize of $300 is warded by the university for the best es- y on some subject chosen with

and of the annual value of $300, obtainable by those who most distinguish themselves in the study of the Scriptures in Hebrew and Greek; and there are six scholarships, worth from $100 to $150, specially devoted to the encouragement of Hebrew literature.

Both at Glasgow and Edinburgh there are professorships of Hebrew; and an adequate acquaintance with that language, supplemented, in the case of Glasgow, with the elements of Chaldee, is among the prescribed conditions of the degree of Bachelor of Divinity. There is also at Edinburgh a Chair of Sanscrit and Comparative Philology, now occupied by Professor Julius Eggeling. It does not appear that this professor has any positive functions to perform in connection with the faculty of arts beyond that of examiner in modern [illegible] presume, although the

being also required. Those candidates who acquit themselves satisfactorily under these tests are furnished by the university authorities with certificates which entitle them to appointments in the civil service of India. It is worth noting, too, that, under the existing regulations laid down by the Secretary of State, seniority in the service of the Anglo-Indian empire is determined according to the order in which candidates stand on the list certified by the university examiners. Nor is this all. An allowance of $750 a year is given for two years to all applicants who pass with credit a preliminary examination, and sub-

IX.

THE FAMOUS IRISH UNIVERSITY.

THERE has been for a quarter of a century an unendowed Roman Catholic university in Ireland, exercising a kind of supervision over several affiliated seminaries. There is also the so-called Queen's University, which is only an examining board, invested with the power of certifying proficiency by degrees, and which stands in much such a relation toward the Protestant colleges at Belfast, Cork, and Galway as does the

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mind that princely foundation, made illustrious by so many learned and distinguished men, and which, among all the academic establishments of the three kingdoms, ranks nearest to the great universities of Oxford and Cambridge. We refer, of course, to Trinity College, Dublin, which is no longer confined to members of the Anglican communion, but is now open to all Irishmen, without distinction of creed.

Not many colleges at Oxford can trace their origin farther back than this ancient institution. Founded during the reign of Edward II. as a university in connection with St. Patrick's Cathedral, it seems to have languished during Plantagenet and Tudor times, until its second and more substantial endowment in 1592, when it

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graduates, and correspond to commoners at Oxford; and, fourthly, sizars, or charity students, who are exempted from annual fees, and have their commons free. We may here mention that the entrance fee for pensioners is $75, and the half-yearly fee $40, thus making the charge for the entire course of four years $395. This sum, we need not say, represents merely the cost of tuition, and is independent of all expenses for food, lodging, care of rooms, and the like, which properly belong to the bursary accounts.

The course of study at Trinity College, Dublin, like that of an American university, covers four years, the student being known, according to his academic age, as Junior Freshman, Senior Freshman (Sophomore), Junior Sophister and Senior Sophister

lish composition and history, mod
ography, Latin composition, and a
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or a single play of Euripides is cou
one author. After entrance, a stud
lows a distinct curriculum, and is
ed to distinct examinations, accor
he pursues the ordinary course requ
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examination throughout the firs
years, special distinctions are awar
excellence in a number of subjects;
the B.A. degree examination, stude
go out in honors in one or more o
departments, viz., mathematics and
matical physics classics mental and

of learning. We do not propose to set forth in detail the requirements of a first class at Trinity, Dublin, in these several branches, but merely note that the range of work, and the means taken to verify the thoroughness and fruitfulness of acquirement, are in no respect inferior to the analogous features of the academical scheme now followed at the English universities. From a somewhat careful comparison of the data bearing on the question, we are led to the conclusion that a first class in classics at Trinity, Dublin, means, in all respects, as much as a first in Greats at Oxford—exclusive of the Oxonian's attainments in logic and philosophy, which form the subject-matter of a distinct school at the Irish establishment. So, too, the highest mathe-

of mathematical science as that of Sir W. R. Hamilton, who at thirteen years of age was, in different degrees, acquainted with thirteen languages, including Syriac, Persian, Hindostanee, and Sanscrit, and who, one year afterward, addressed a letter of greeting in the Persian language to the Shah's ambassador. We are not surprised to hear that at every quarterly examination he obtained the chief honor in science as well as languages, when we learn that before his entrance at Trinity he had made original investigations in optics, and while still an undergraduate was appointed Professor of Astronomy in the university and Astronomer Royal of Ireland. It was this son of Trinity who accomplished for optics, by his Essay on the Theory of Systems of

learning and in the exact sciences presu
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genius has been exhibited very seldom, t
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is to this remarkable Irishman that we o
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delivered between 1848 and 1865, at Tri
ty College. Dublin.

mising that English composition is compulsory on all students, and that Latin composition forms a part of every classical examination, we will proceed to mark the scope of work prescribed for every undergraduate who is satisfied with obtaining a degree. During the freshman year, the required studies at present comprise the following: In Greek, three orations of Demosthenes, a play of Euripides, and a book of Herodotus; in Latin, Cicero's oration for Milo, two books of the Odes of Horace, and a book of Livy; in mathematics, three books of Euclid, algebra to the end of quadratic equations, and trigonometry to the end of solution of plane triangles. In the senior-freshman, or, as we should say, sophomore year the stu-

the student is carried considerably beyond the stage reached in his first year, and he also takes up in mental science Walker's edition of Murray's Logic, Locke's Essay on the Human Understanding, and Mansel's Metaphysics. For the junior year are exacted in the classics a book of Thucydides, the oration of Demosthenes on the Crown, and a tragedy of Æschylus, together with the satires of Horace, four satires of Juvenal, and a book of Tacitus; in mathematical physics, Galbraith's and Haughton's manuals on mechanics and hydrostatics, Lloyd's Optics, and Brinkley's Elements of Astronomy; while in mental science the study of Locke and Mansel is continued. In the senior-sophister year there are seven distinct courses, three of which are obligatory, while two of the re-

ophy, Butler's Analogy, and Paley's Evidences; and in English composition, Milton's Comus and Paradise Lost (Books I. and II.), Carlyle's Essays on Johnson, Burns, and Scott, and two plays of Shakspeare. If among the optional studies the undergraduate elect mathematical physics and the classics, he is expected to expand his knowledge of mechanics, hydrostatics, and optics; while in Greek he must read one book of Aristotle's Ethics, one of the Politics, and one of Plato's Republic; and in Latin, a book of Tacitus, one of the Georgics, and one of Cicero's Philosophical Treatise De Officiis. Should he, on the other hand, prefer the courses in experimental and in natural science, he must acquaint himself by actual experiment in the laboratory with the

Text-Book of Botany. So much for the range of acquirement demanded from every applicant for a degree. Now, as to the minuteness and accuracy of the knowledge expected, we remark that a rigorous examination is held at the close of each term, or thrice in every year. Moreover, a student must pass with positive credit at least four examinations during his first two years, in order to rise to the junior class. Again, during the two last years, he must obtain credit for at least three intermediate provings before he can present himself for his degree examination. In a word, eight is the minimum number of strict and exhaustive tests imposed on every applicant for the certificate of Bachelor of Arts. We do not count the entrance examination, which is, to some extent, analogous to responsions

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logue. There are other names on her roll of honor which should make her esteemed and cherished wherever the English tongue is spoken. Certainly we shall not soon forget what English literature owes to the *alma mater* of Bishop Berkeley and of Edmund Burke, of Dean Swift, Goldsmith, and Tom Moore.

X.

THE LONDON UNIVERSITY.

It is natural that Americans should have a somewhat vague conception of the London University, since it constitutes a marked anomaly in the scheme of British education. The more intimate our acquaintance with the distinctive features of the older

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had the power of conferring deg
cept the Universities of Oxford a

During the thirty intervening years the University of London had been of immense utility to the Dissenting, the Catholic, and the Hebrew elements of the population. Its non-sectarian character was clearly brought out in its first charter, by which it was clothed with the right of conferring degrees in all the faculties, with the sole exception of theology; and the exercise of these functions was eagerly welcomed by a large part of the British nation, so long denied the vouchers of a liberal education, as the tardy redress of a great wrong. Under the system of examinations put forth by the authorities of the new institution, the pupils of Catholic seminaries, and of Congregational, Methodist, and Baptist colleges, found their proficiency certified and stamped with an official seal, and them-

subsequent adoption of a somewl
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learning and research, is made up of the most eminent and authoritative names in England. Considering the unquestionable competence of the agents to whom it delegates the tasks of inquest and approval, it cannot be disputed that the University of London adequately fulfils the specific object of its founders. In a word, it constitutes a standing board of examination, national, or rather imperial, in the scope of its affiliations, and whose decisions carry with them the weight of a central, impartial, and unchallenged tribunal.

published by the governing body of the London University, whose rigorous oversight concerns itself not only with the range, but with the thoroughness of the work performed. It is the framing of such rules, and their adjustment to a multitude of colleges organized on diverse principles, and situated in all portions of the British empire, which demands a high degree of wisdom, experience, and authority on the part of the central officers. There are now upward of fifty collegiate institutions dispersed throughout the British dominions, including, for example, the University of Sydney and the University of Toronto, whose certificates of proficiency in arts and laws are adjusted to the requirements of the London examiners; so that the reg-

scribed for degrees, but none is long suffered to fall below it under penalty of exclusion from the affiliated list. Under such circumstances, it is clear that the framers of such regulations are virtually the educational legislators for a large majority of British subjects; and we are not surprised to find that they include some of the most eminent Englishmen of the nineteenth century. The first vice-chancellor, for instance, was George Grote; and the present occupant of the office is Sir John Lubbock; while the list of fellows for 1879 comprehends, besides the Duke of Devonshire, Lord Derby, and Viscount Cardwell, Messrs. Goschen and Robert Lowe, Sir J. D. Hooker, Sir William Jenner, Sir James Paget, and Sir Henry Sumner Maine.

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inferior to the standard of [illegible] maintained at our leading American universities, but that a vigorous effort is made to enlarge and stimulate the functions of the subordinate institutions by separate examinations for honors.

Candidates for matriculation are not approved by the examiners, unless they have shown an elemental knowledge of Latin and of any two of the following languages: viz., Greek, French, German, and either Sanscrit or Arabic; of the English language, English history and modern geography, of mathematics, natural philosophy, and chem- [illegible] That the measure of acquaintance [illegible] rudimentary, is manifest

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to have mastered quadratic equations, the elementary geometry, the mensuration of the simpler plane and solid figures, and the elementary formulæ of trigonometry. In classics he need offer only two books of the Georgics, one book of Tacitus, one book of the Iliad, and one book of the Cyropædia. He must further exhibit a cursory acquaintance with the history of England to the end of the seventeenth century, with the history of English literature for some one period—say from 1649 to 1700—and with a play of Shakspeare and Milton's Paradise Regained. His knowledge of the French or German language is tested [illegible] English, with questions

single subject—for instance, Latin. Here the student must offer the whole of Virgil and Horace, two plays of Plautus and two of Terence, two books of Lucretius, two satires of Juvenal and two of Perseus, three orations and two Philosophical Tracts of Cicero, three books of Livy, and six of Tacitus. He must also evince considerable skill in writing Latin prose, and compose original essays upon questions arising out of the classical authors read. We observe that the candidate who distinguishes himself the most on this occasion receives an exhibition of $200 per annum, tenable for two years, provided he covenants to present himself at the final B.A. examination within that period.

Those students who are satisfied with a

need offer only one play of Sophocles and one book of Tacitus. After passing this mediocre test, which is indispensable in all cases, those who seek honors may present themselves for a supplemental examination in any one of five departments. If we select as an example the classical branch, we find that the Latin subjects offered are the same as those above enumerated for the first B.A. examination for honors. In that case no Greek was taken in; but now the candidate must offer twelve books of the Iliad and six of the Odyssey, two plays from each of the four great dramatists, two books of Herodotus and three of Thucydides, certain orations of Demosthenes and Æschines, with three books of Plato's Republic and three of Aristotle's Politics. A brief inspection of these data

sics at the final B.A. examination who acquits himself with most credit receives £250 per annum for the next three years, with the style of university scholar. He may now, if he choose, prepare himself for the degree of Master of Arts, which is conferred after examination, and to which he is eligible after the expiration of one year. There is also a special degree at the London University known as Doctor of Literature, and for which two examinations are prescribed at successive intervals of a year each.

Besides the examinations in arts, which supply a common standard of requirement and test of proficiency to some fifty affiliated institutions, the University of London confers the degrees of Bachelor and Doctor

tuted an examination in questions relating to public health, and issues a certificate of qualification in such subjects. There is also an examination resulting, not in a degree, but in a certificate, in the original texts of the Scriptures; but no question is put to any candidate bearing upon any doctrinal point disputed among Christians, nor is any query so framed as to require an expression of religious belief on the part of the candidate.

One other distinctive feature of this institution merits emphatic recognition. Created by some of the most progressive minds of our day, the London University has usually been found in the van of innovation and reform. As might have been expected, it is the first of English universities to [illegible] doors to women. By the

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XI.

OWENS COLLEGE, MANC

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lecturers, and in the medical department almost an equal number. During the session of 1878–'79 there were 653 students in attendance upon the day classes, and 748 who availed themselves of the evening classes, which are an important feature of this institution. The evening classes are intended to afford working-men the means of a liberal education, and accordingly the fees payable for each course of lectures are extremely low, and proficiency has heretofore been encouraged by the offer of numerous exhibitions, ranging in annual value from $12 to $50. These, however, it is now proposed to replace by a smaller number of scholarships of greater value. The proportion of these evening students who pass the examinations of the University of London is considerable, and is increasing every year. The

Although Owens College is a very young institution, having been founded in 1851, and reconstituted in its present shape and incorporated by act of Parliament only eight years ago, it has already been endowed with the means of offering considerable aid and encouragement to indigent students. There is one fellowship worth $750 a year, and tenable for three years, open to any graduate of the college who has taken a degree at some university of the United Kingdom, and who successfully passes a rigorous examination. For undergraduates there are nineteen scholarships and exhibitions, ranging in annual value from $100 to $500. There are also ten "entrance" scholarships, so-called, worth from $45 to $200 and confined to students

and for general distinction in the college examinations. There are, moreover, as we have said, a number of exhibitions and scholarships specially endowed, and open to evening students only, besides prizes offered by the Cobden Club to the same category of scholars for acquirements in political economy.

The number of special distinctions gained by students of Owens College at the University of London, in the various examinations, is certainly remarkable. During its brief academical career as a feeder of that institution, it has carried off not less than eleven scholarships, eighteen exhibitions, eight gold medals, and twenty-five prizes, while hundreds of its candidates have graduated with honors, although, be it remembered, they have competed with every college and seminary in Great Britain, with the exception of three English and four Scottish universities. The nota-

which has attended the labors

the means of constant oversight and control employed at Oxford and Cambridge are here entirely lacking. Except during the hours of lecture, or, as we should say, of recitation, the student is well-nigh as independent of official supervision as he would be in a German university. Owens College has no accommodation for the residence of students, though halls of residence, owned and managed by private persons, may be licensed by the authorities, and one such is now open. A register of lodging-houses, kept by persons who are willing to conform to certain rules of discipline laid down by the college, is published in the calendar. But while attempting in this way to enforce certain regulations, parents and guardians are distinctly inform-

assert its right to an independent existence. At present it is totally unrepresented in the governing body of the London University, for whose examinations its students are prepared. Even were it able, moreover, to obtain some influence upon the conduct of those examinations, this would, owing to the multitude of affiliated seminaries, be too small to satisfy the claims for change which, like all academical institutions ambitious of moving with the progress of their age, Owens College must, from time to time, desire to make. It is said, too, that the North of England needs a new university. There has been of late years a great revival of grammar schools in that part of the country, and it appears that only two or three of these secondary establishments act as feeders to Oxford and Cambridge. It is the opinion of many impartial observers, whose official duties have brought them in contact with these endowed schools, that a [illegible] in Manchester, free from the tra-

large number of boys who now, in (of anything short of an academic by the Isis or the Cam, go straigh business at seventeen years of age.

XII.

THE STUDY OF LAW AT OXFORD A CAMBRIDGE.

It is more than a century and a c since a young Englishman of thirt had failed to earn a living at the bar ed a course of lectures at Oxford up English Constitution and laws. T markable vogue attained by William stone's commentaries led to the foun five years later of the Vinerian pro

grees conferred by the university are those of Bachelor and Doctor in Civil Law. An important advance was made, however, in 1853, when candidates for the diploma of Bachelor of Arts were allowed to graduate in a new and co-ordinate school of law and modern history, while much more adequate scope was given to the study introduced by Blackstone when this school of honors was divided in 1872, a separate department being assigned to jurisprudence. The course of events at Cambridge has been to some extent analogous. From 1815 up to 1858 there were examinations in civil law whereby students were classed according to their proficiency. These were replaced in the last-named year by an LL.B. examination, open to graduates, and this again gave way, in 1875, to a regular law tripos co-ordinate with the classical and mathematical schools of honors, and offering an alternative course of work to applicants for a B.A.

deserve honors, are entitled to admission either to the degree of Bachelor of Arts or to that of Bachelor of Laws, or to both these degrees, at their option. So much for the history of the movement which has, at last, established the study of their country's jurisprudence at the English universities. We may now look at the scope and quality of attainment prescribed for graduation with distinction within this field of effort; and in this case, as in others, we may be aided by a comparison of the work required at Harvard for a degree of Bachelor of Laws.

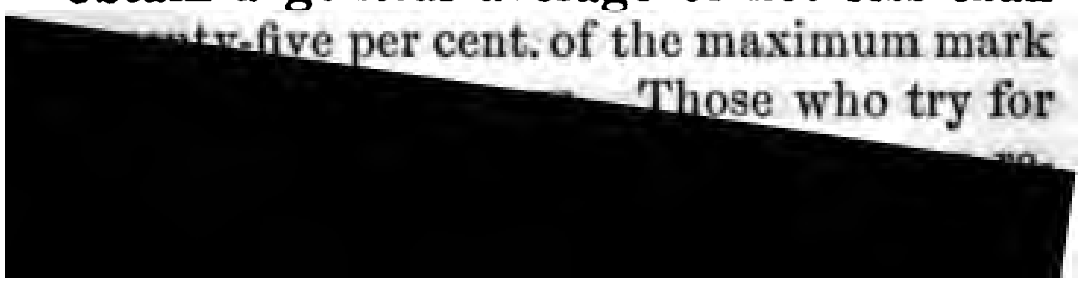
As is well known, the Harvard Law School is open, not merely to all graduates from the academical department of that institution, and to any person fortified with a B.A. diploma from any of our multitudinous colleges, but also to any non-graduate who can pass a rudimentary examination altogether inferior in range to that imposed upon candidates for admission to the freshman class belonging to

to know a little Latin, an equally elemental acquaintance with French being accepted as a substitute. It is obvious, therefore, although the fact is by no means widely understood, that the mere possession of an LL.B. degree from Harvard is no *prima facie* evidence of a liberal education. In this respect our American college differs signally from the English universities, which do not suffer their certificates of legal proficiency to be displayed by persons totally wanting in the liberal acquirements associated in the public mind with such institutions.

With such a standard of admission, no very brilliant attainments in jurisprudence can be expected from those law students at Harvard who pursue what is known as the ordinary course, and who are perhaps too richly recompensed with a mere degree. There is, however, an honor-course, where the circuit and thoroughness of the work required would be creditable to any university, and

dents who have been in the school at least two full years, and have passed satisfactory examinations in the entire honor-course, which nominally covers three years. So far as regards the common and statute law, it will be found that the range of study outlined for the honor-course at Harvard is much more comprehensive than in the analogous department of either English university. Not quite as much may be said of the researches expected in equity jurisprudence, for no specific acquaintance at first hand seems to be enjoined at Harvard with those principles and precedents of the Roman law to which, mediately or directly, the English Court of Chancery has been so much indebted. During the first fold of work mapped

ages, and other equitable titles. The work of the third year covers such topics as sales of personal property, bills of exchange and promissory notes, and the law of agency and carriers. We should add that Professor Bradley lectured during the last twelvemonth on constitutional law and the conflict of laws; and Professor Gray on wills and administration, as well as on the subjects of property and jurisprudence in general. An acquaintance, however, with the last-named topics is not exacted. Such is the scope of the work performed, and we may add that adequate precautions seem to have been taken to insure a good measure of minuteness and accuracy of knowledge. In order to obtain the honor degree, a candidate must pass the examinations in the studies of the second and third years without any conditions whatever, and must obtain a general average of not less than



performances come up to the very moderate standard required for the inferior certificate.

At Oxford, as we have said, it is optional with any candidate for the degree of Bachelor of Arts to offer himself in the school of law for the final public examination. This course is frequently taken by prospective barristers, who, after passing Moderations, have their name entered at the Inner Temple, where they eat the regulation number of dinners during the two subsequent years employed in reading for the Oxford degree. The certificate of the Oxford Moderators is accepted as a substitute for the examination on admission to the Inns of Court, while the subjects studied in the honor-school of law at the univer-

udence covers four lines of work—
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in the first or second class. Under
t topic, candidates are examined in
ıciples of jurisprudence, in the the-
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legal institutions—with special refer-
Austin's Lectures, Bentham's Prin-
of Morals and Legislation, and his
of Legislation, as expounded by Du-
nd to the works of Sir H. S. Maine.
ıection with these subjects they are
rected to consult Hobbes's Levia-
ooks I. and II., and Savigny's Sys-
ı heutigen Römischen Rechts, vol. i.
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broad, historical survey, the examiners demand some definite knowledge of two special branches of English law. Those at present enjoined are the principles of the law of contracts, and the law of real property, the latter subject being studied in Stephens's Commentaries, Williams's Treatise, and Digby's introduction to the history of the topic—an acquaintance with the principal statutes referred to in the latter work being rigorously exacted. Passing to Roman law, we find that the Institutes of Gaius and the Institutes of Justinian must be textually got up, as the phrase is—that is, with peculiar diligence and accuracy, and candidates are likewise expected to be broadly conversant with the history of Roman legislation and the evolution of Roman judicial institutions. In

to seas, ships, and navigable rivers, they are referred to Ortolan's Diplomatie de la Mèr, Liv. II. Such is the scope of investigation at present prescribed in the honor-school of jurisprudence; but the requirements are being steadily expanded. The examiners are empowered to impose additional subjects which they may deem suitable to be studied in connection with jurisprudence—especially in the case of candidates who have not obtained a class in any other school of honors—and the Board is also at liberty to prescribe books, or portions of books, in any language. Judging from the progress lately made at Oxford in this direction, we may reasonably infer that a first class in her honor-school of law will represent ten years hence a really notable

supplement this text-book with Markby's Elements of Law, with Savigny's System of the Modern Roman Law, with Mackelbey's Lehrbuch des Römischen Rechts, Thibaut's System des Pandekten-Rechts, and Maine's Ancient Law. In comparative jurisprudence, the authors to be consulted are Fœlix's Droit International Privé, Story's Conflict of Laws, and Westlake's Private International Law. Of special subjects under the head of English law, we learn that applicants for honors in this tripos must exhibit a satisfactory acquaintance with the law of real and personal property, and a relatively minute knowledge of such sub-topics as tenure and ownership, contracts and torts. Another distinct line of examination is concerned with English criminal law and still anoth-

Communities, Leake and Pollock on C
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law the candidate is required not onl
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international law the range of study is s
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although we observe that a number of
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and Calvo (Droit International Theori

merous problems and write a number of essays on themes suggested by the knowledge gained at second-hand. The names of those students who acquit themselves so as to deserve honors are arranged in three classes, according to merit, while those who fail to get a class, and yet do well enough to deserve the ordinary B.A. degree, are excused from the general examination for the same. We may add that any candidate who gains honors at the law tripos, and who had previously taken his B.A. degree in some other branch of study, is entitled to proceed at once to a degree peculiar to Cambridge, and known as Master of Laws, without further examination.

XIII.

THE STUDY OF MEDICINE IN THE EN AND SCOTCH UNIVERSITIES.

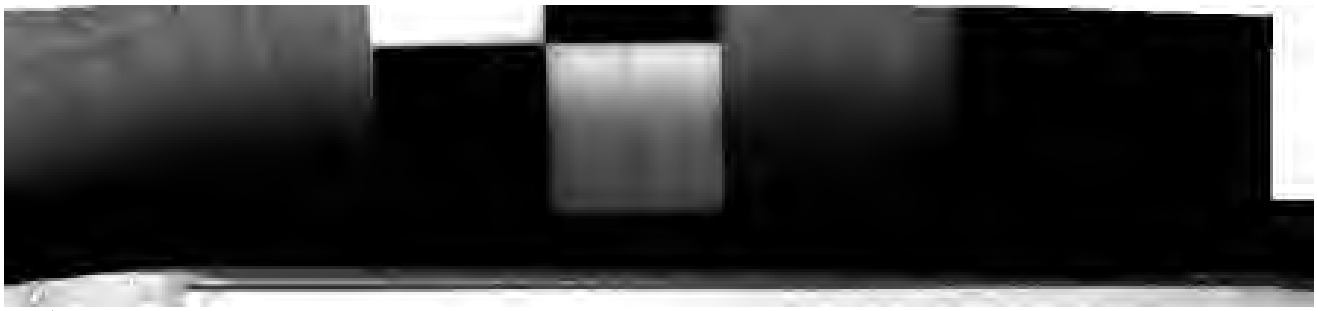
THE value of certificates of medica ficiency is obviously proportioned t student's opportunities of personal e ence in the treatment of disease, and professional standing of the certifyin ties. An endorsement, for example, l visiting physician of a first-rate ho should go further to accredit the qua tions of an assistant who has worked his eye than any diploma emanating an academical body. That in the m

and hospital ward was, as yet, substantially unknown. If a degree at Oxford and Cambridge, or at Edinburgh and Glasgow is still invested with a large and solid significance, this is due to their candid recognition of the altered state of things—of the almost total displacement of the academical by the practical element in a medical education. We propose to show how thoroughly clinical acquirement is acknowledged by the English and Scotch universities as the indispensable condition of a medical or surgical degree, and to compare the extent of their exactions in this direction with the range of practical work demanded of graduates from the Harvard School of Medicine.

We will first glance, however, at one preliminary question. The sole excuse for as-

of a liberal education. We have no intention of arguing the necessity of such preparation on abstract grounds; we have no doubt that consummate operators in surgery, and veritable masters of diagnosis or therapeutics, could be named who are wholly unacquainted with the Greek and Latin languages. We insist, however, that an implication is conveyed by a medical degree issuing from any of the universities above named to the effect that a substantial acquaintance with the Latin and Greek classics—the existence, in a word, of a so-called liberal culture—is conjoined with attainments of a special or professional kind. As a matter of fact, this implication is disingenuous and unfounded in the case of all the institutions above

adorn themselves with a medical degree emanating from that seat of learning. Every candidate for a medical diploma must exhibit his *testamur* from one of the schools at the final public examination for the degree of Bachelor of Arts. At Cambridge, on the other hand, medical students need only pass what is called the previous examination in the academical department; a test corresponding to responsions at Oxford, and decidedly inferior to the examination for admission to the freshman class at Harvard. At Edinburgh even less is required in the way of a general education. The candidate for the diploma of Bachelor in Medicine undergoes a preliminary ex-



and German, but he need not know a word of Greek unless he desires to take the further degree of Doctor, in which case he must master a single book of the Cyropædia. In other words, the possession of a degree of Doctor of Medicine from the University of Edinburgh really implies a modicum of classical attainments which would not be accepted of a boy at Exeter Academy at the close of his second year. As to Glasgow, we need only say that the preliminary attainments required of medical students are exactly equivalent to those just named, with the exception that a book of Xenophon is supplemented by the Greek Gospel of St. John among the imposing prerequisites to a doctor's diploma.

and, secondly, such a knowledge of physics as may be attained from Balfour Stewart's elementary works. In view of such a programme, we are not surprised that the authorities should give the non-graduate candidate fair warning that, in the appraisement of his liberal acquirements, his mastery of spelling, grammar, and syntax will be considered.

Of course, it matters little to a man with a broken leg whether he who sets it can read Galen and Hippocrates in the original, and a surgeon's deficiencies on that score might not be worth mentioning but for the species of fraud perpetrated on public opinion by the affiliation to universities of professional training-schools singularly unexacting as to general attainments. It is obviously of far greater moment to deter

his graduation in arts. The medical examinations are conducted partly in writing, partly *viva voce*, and partly by practical demonstration. Midway in the course a student's knowledge is tested in such subjects as human anatomy and physiology, comparative anatomy and physiology, and those parts of mechanical philosophy, botany, and chemistry which illustrate medicine. The field of final inquiry includes the theory and practice of medicine (including diseases of women and children), the *materia medica*, therapeutics, pathology, the principles of surgery and midwifery, medical jurisprudence, and general hygiene. Nor should we omit to mention a prerequisite, without which an Oxford medical diploma would be worth

scribed at Edinburgh and Glasgow. At Cambridge five years of medical study are required of candidates for the degree of Bachelor of Medicine, with the exception of those students who have obtained honors in some one of the academical triposes, in which case four years are deemed sufficient. The scope of study corresponds in most respects to the Oxonian curriculum, but the practical qualifications are more carefully defined. The candidate must furnish proof, for instance, of having personally attended ten cases of midwifery; of having attended the medical practice of a recognized hospital during three years, and the surgical practice during one year at least; and of having been clinical clerk for a minimum term of six months at a recognized hospital; or of having had

by the local government board that he has acquired proficiency in vaccination. We may say here, that both at Cambridge and Oxford the degree of Doctor in Medicine is conferred almost as a matter of course upon those who have secured a bachelor's diploma. The only additional requisites worth citing are the reading of a thesis composed beforehand by the candidate, and the writing of a short extempore essay on some subject proposed by the examiners. It should also be noted that at Cambridge there is a special degree of Master in Surgery, for which an applicant must pass all the examinations prescribed for Bachelors of Medicine, besides demonstrating the possession of specific qualifications. He must, for example, have practised dissection during two seasons, have attended the surgical practice of a recog-

ter in Surgery, the last-named certificate being conferred on no person who does not also, at the same time, obtain the first-named diploma. No student is admitted to the examination for an M.B. degree who has not been engaged in medical study for four years, one of which must be spent in the University of Edinburgh, and another either at Edinburgh or in some other university entitled to confer the rank of Doctor in Medicine. The medical session of each year, or *annus medicus*, is defined to mean at least two courses of not less than one hundred lectures each, or one such course coupled with two others of not less than fifty lectures each. The student's acquaintance with the subjects treated in these lectures, which cover the whole field of medical science is rigorously probed by

hospital, and that he has attended, for at least two years, the medical and surgical practice of a general hospital which accommodates not fewer than eighty patients, and possesses a distinct staff of physicians and surgeons. He must further produce a certificate that he has followed, during a course of not less than fifty hours' instruction, the class of practical *materia medica* in the University of Edinburgh, or an equivalent elsewhere, or that he has been engaged during at least three months' apprenticeship in compounding and dispensing drugs at some recognized laboratory or dispensary. In addition to these opportunities of applying knowledge and [illegible] technical proficiency, he must [illegible] attended for a period

care taken at Edinburgh to give substantial import to a diploma of Bachelor in Medicine. We may add that the higher degree of Doctor at this institution is far from being mere surplusage, seeing that a candidate must provide evidence of having been engaged, subsequently to receiving his M.B. degree, for at least two years in attendance on a hospital, or in the military or naval medical service, or in private practice. Nor will the thesis exacted on this occasion be approved by the examiners if it be the jejune and perfunctory performance elsewhere proffered in such circumstances. It must contain either the results of original observations in practical medicine, surgery, midwifery, or in some of the sciences embraced in the curriculum for the bachelor's degree; or else a full di

medical degrees, and, as at Edinburgh, the professional curriculum enjoined upon candidates for the diploma of Bachelor in Medicine is of four years' duration. The regulations are likewise identical as regards the amount of clinical experience and hospital practice expected from the student. Here, too, the examination in surgery includes operative surgery, wherein the student must demonstrate his practical competence. Altogether exceptional precautions are taken at Glasgow to verify the range and quality of professional attainments, no less than six examinations being peremptorily imposed during the four years' course. Here, too, the degree of Doctor of Medicine means two years of professional experience following the bachelorship, and proof of original capacity in the shape of a dissertation, for which no mere compiling of other men's labors will suffice. It is worth while, likewise, to cite the solemn pledge, or declaration, taken and subscribed on graduation at Glasgow by every candi*date for a* medical or surgical degree: "I

do solemnly and sincerely declare that as a graduate in medicine of the University of Glasgow, I will exercise the several parts of my profession to the best of my knowledge and abilities for the good, safety, and welfare of all persons committing themselves, or committed, to my care and direction; and that I will not knowingly or intentionally do anything, or administer anything to them to their hurt or prejudice, for any consideration or from any motive whatever. And I further declare that I will keep silent as to anything I have seen or heard while visiting the sick which it would be improper to divulge."

By way of supplying ourselves with a convenient standard of comparison, let us contrast the requirements above outlined with those prescribed at the Harvard Medical School. The medical department of Harvard University is established in Boston, in order to secure those advantages for clinical instruction and the study of practical anatomy which are found only in large cities. This is an obviously judi-

cious location, and we repeat that no sound reason can be assigned for maintaining any connection whatever between the professional school and the academical institution on the other side of the Charles River provided non-graduates are to be admissible to the former. It is true that its medical diploma might, under such circumstances, cease to pass current as a voucher of a liberal education, but whatever validity it has as a certificate of technical proficiency would still belong to it. It seems hardly worth while for a school so widely known and honored for substantial professional services to countenance a system which savors of false pretences. Why should it not, like Oxford, exact a degree of Bachelor in Arts as a prerequisite of admission, or else cut itself loose altogether from academical associations

erably enlarged, so as to extend over three years, and the tests of proficiency have been made much more rigorous. Instead of the former oral examination for the degree of Doctor of Medicine, held at the end of the curriculum, a series of written examinations on all the main subjects of medical instruction is now distributed through the whole three years. Besides theoretical tuition, clinical instruction is given daily by hospital visits and other exercises. Students are furnished with cases for personal examination, and are called upon to report them before the class. In the last year they are supplied with material for repeating the usual surgical operations, and they also receive practical teaching in the method of making autopsies. When we consider that the wards of the Massachusetts

assistants in the work of instruction and of examination for the degrees of bachelor and doctor in music. At Cambridge—unlike Oxford in this respect—the rudiments of a liberal education are demanded of candidates for these diplomas. No one, for instance, can be admitted to the examination for the degree of Bachelor in Music unless he have passed the so-called previous examination in the academical department (corresponding to the Oxford responsions), or can produce other evidence of equivalent attainments. The musical examination itself consists of three parts, in all of which a tolerably high standard of requisition is maintained. There is first a preliminary investigation of the candidate's acquaintance with acoustics, counterpoint

prise some portion for a solo voice, and some portion for a chorus of five vocal parts, also some specimens of canon and of fugue, and that the whole have an accompaniment for a band of bowed instruments only. This exercise must be coupled with vouchers that the work is the candidate's own unaided composition. At a subsequent period occurs a more advanced examination in counterpoint, harmony, canon in two parts, fugue in two parts, especially as to the relation of subject and answer; form in composition, as exemplified in the sonata; the pitch and quality of the stops of the organ; such knowledge of the quality, pitch, and compass of orchestral instruments as is necessary for reading from score; the playing at sight from figured bass and from score; and, finally, the analysis of some classical composition, both with regard to harmony and form, the name of which is previously announced by the examiners.

a more exhaustive acquaintance with the theory of music, and, as proof of their ability, must furnish a composition of extended scope, having an accompaniment for a full band, and intended for public performance in the university.

The study of fine arts at Cambridge is prosecuted in connection with the collections deposited in the Fitzwilliam Museum. Among the well-known treasures of this museum are paintings by Titian, Paul Veronese, Salvator Rosa, Rembrandt, Paul Potter, Ruysdael, Vandervelde, Hobbema, and Peter de Molyn. The water-color drawings include twenty-five of Turner's works, presented by John Ruskin; and the collection of prints is one of the best in Europe, being especially rich in the works of the early engravers of Germany and the Low Countries. Here, also, are the Disney and Clarke ancient marbles, and a collection of Phœnician and Greek glass purchased from Gen-

coins, or gems, or of copying pictures, are permitted to do so under easy conditions. On the ground-floor of the museum a course of lectures on the theory and practice of the fine arts, or of some section of them, is annually delivered by the Slade Professor, the present occupant of the chair being Mr. Sydney Colvin. The Disney Professor of Archæology, Mr. Churchill Babington, also delivers lectures from time to time on the remains of ancient art.

The professorship of music at Oxford was founded in 1626, provision being made at the same time for a choragus, or master of musical praxis. The stipends of these officers are paid from endowments, with additions from the university chest, but there is also a precentor, supported by fees. The present occupant of the professorship is Sir Frederick Gore-Ouseley, and the choragus is Dr. C. W. Corfe, who together conduct the prescribed examinations for de-

Candidates are required, however, to pas
two examinations in musical technics, whicl
are conducted partly in writing, partly *viv*
voce. The preliminary test is applied t
the student's knowledge of harmony and o
counterpoint in not more than four parts
The second examination covers five-par
harmony, the history of music, the use o
musical instruments, and the form an
structure of the works of certain desig
nated composers. Under the last-name
head the applicant was expected, on a re
cent occasion, to evince a critical knowl
edge of the full scores of Beethoven's "Sep
tuor," of Handel's "Saul," and of Mozart'
G minor symphony. Before any candidat
can present himself for this second exami
nation he must have submitted for the ar

or practised music for at least five years since his admission to the school; he must pass an additional examination conducted wholly in writing, and compose a piece of vocal music in eight parts with an accompaniment for a full orchestra, which, when approved, is to be performed in public. A scrutiny of the conditions prescribed for this degree at Oxford, as well as at the sister seat of learning, will probably convince the reader that adequate precautions are taken to insure creditable proficiency in the technics of music.

There is no co-ordinate School of Design at Oxford, as, indeed, there is no Fine Arts tripos at Cambridge. At the Taylor institution, however, affiliated with the former university, the Ruskin drawing-school was established in 1872 by John Ruskin who



Professorship of Fine Arts. T
sity collections of paintings,
gems, and coins are placed in
Building, while the Ashmolean
in large part devoted to antiq
tistic interest, one story of the e
assigned to the Arundel marble
similar remains.

In the Harvard corps of ins
find John Knowles Paine set d
fessor in Music, Charles Elliot
Professor of the History of Ar
Moore as instructor in free-ha
and water-colors. No degree
much less in fine arts, is confe
university but among the elec

tery of musical notation, and some practical knowledge of vocal and instrumental music. The considerable measure of recognition given to this study may be inferred from the fact that candidates for the academical degree of Bachelor of Arts may graduate with honors in music, and that further progress in musical attainments is held to qualify an applicant for the advanced degree of Doctor in Philosophy.

In the fine arts the elective courses open to the Harvard undergraduate are three, the first comprising three lectures weekly by Mr. Moore on the principles of design in painting, sculpture, and architecture. The second and less elementary course comprehends three weekly lectures by Professor Norton, covering such subjects as the history of the arts of construction and design, and the special consideration of Oriental and Egyptian, of Greek and Roman, and of mediæval art. The third course,

last courses no student is admitted who is unable to use French and German text-books, and that a knowledge of Italian is urgently recommended. So far it does not appear that special honors are awarded at graduation for proficiency in this department, though there is no reason to suppose that the study of the fine arts will ultimately receive less consideration than that of music.

From the facts here collated it is obvious that Harvard imperatively needs, for progress in this direction, an art repository, which, if not comparable to the splendid endowment bestowed on Cambridge by Viscount Fitzwilliam, shall at least ap-

[illegible] in range and quality the Oxonian

ches, and properly lighted apartments drawing and painting. It is to be ɔd that these legitimate wants of this ɔrtant department will be met, at no ınt day, by the friends of the univer-

XV.

TO THE INDIGENT, AND PRIZES AT THE ENGLISH UNIVERSITIES.

' is well known that in our leading ɔrican colleges, as well as in English ersities, the nominal cost of living may naterially lessened in the case of an ıstrious student by the assistance af-ed him from various beneficiary funds rded under various conditions. In the litude of her endowments intended for



that whose possession should be esteemed a precious privilege, and of assigning to this end large sums which would signally further the true academical object of tuition, is a question much debated of late years. If we may judge from the recent tendency of British legislation, and the present disposition of the Oxford governing bodies to concentrate more of their resources on the function of instruction, the opponents of eleemosynary funds would seem to have the best of the argument. That is an inquiry, however, upon which we need not enter here, having simply in view a comparison of the schemes of education actually in force in the two countries. But if the enormous sums devoted at Cambridge and Oxford to the sole end of coaxing indigent youths into the field of scholarship seem to the American reader a preposterous waste of force, we may remind him that it is against this feature of the existing *régime* that English champions of university reform are aiming their *sharpest blows.*

The encouragement given to industrious students at Cambridge and Oxford, under the form of scholarships and prizes, may be distributed in two classes, according as it emanates from the university proper or from particular colleges. Under the former head at Cambridge belong forty-three scholarships, tenable for various terms, in no case exceeding seven years, and worth from £20 to £100 a year. There are also in the gift of the university six so-called exhibitions, whose annual value varies from £15 to £50. With these must also be grouped upward of thirty prizes and medals, free and open to competition for the whole university, and amounting in their aggregate annual value to upward of £1500, three-fourths of which are given for proficiency in classics and English composition. We may add that there are two benefices in the gift of the university proper, the candidates being chosen by the Senate.

It is with the col-

Trinity College, for example, the most magnificent foundation at Cambridge, there are no less than seventy-four scholarships, of an annual value of £100, besides six minor scholarships, worth from £50 to £75; sixteen sizarships, entitled to commons and allowances equivalent to £70 per annum, together with a variable number of subsizars, who may gain for scholastic merit from £15 to £25; also fourteen exhibitions, ranging in value from £4 to £50 a year. There are, moreover, about twenty prizes, worth from £2 to £50, open to competition among members of the college, besides a yearly distribution of books (corresponding to the Harvard Detur), for distinction in college examinations. We may add that the sixty fellowships at Trinity are usually filled from graduates of the college, although other members of the university are eligible. Besides these fellowships, which are known to be very lucrative at Trinity, although the precise income is not stated in the calendar, there are nearly seventy church livings in the gift of the college to which,

as they fall vacant, the fellows are presented.

At St. John's College, which is also munificently endowed, there are sixty foundation scholarships, worth £50 a year; eight minor scholarships of the same value; also some sixty exhibitions ranging from £18 to £63 a year, besides the sum of £1010 annually distributed by the college authorities among the most deserving students. There are at St. John's nine sizars who have their commons free; and a large number of prizes is annually awarded at the college examinations. On the whole, it would appear that not less than $34,000 per annum is set apart from the revenues of this single college for the maintenance of scholarships, exhibitions, and other emoluments tenable by persons *in statu pupillari*. There are, further, not less than fifty-six fellowships and five studentships, the latter worth from £150 to £200 a year and

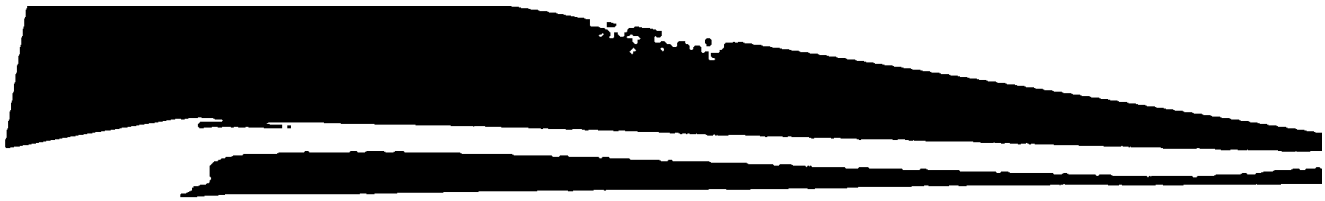
from the degree of M.A.; and that this r
is obeyed without reluctance may be
ferred from the fact that St. John's has
its gift more than fifty benefices, some
great value, and all of which fall to t
fellows on the occurrence of a vacan
Without setting forth in detail the endo
ments applicable to the encouragement
learning in the seventeen colleges of Ca
bridge, we may mention that King's, Cla
and Caius are prominent in this respe
and that the aggregate sum applied to t
assistance of students at this university c
not fall short of $150,000 per annum,
clusive of the incentives to industry h

rate bodies throughout the United Kingdom.

As regards the aids to study supplied at Oxford, we will look first at those within the gift of the university proper. These include thirty-seven scholarships, ranging in annual value from £30 to £200, besides three travelling fellowships, each worth £200 per annum for three years, and about twenty prizes, ranging in value from £18 to £100. Important as these emoluments appear from an American point of view, they are quite insignificant beside those at the disposal of particular colleges and halls. Thus, at Christ Church, there are fifty-two junior studentships, as they are called, tenable for five and seven years, and worth from £85 to £100 a year, besides seventeen exhibitions, varying in value from £30 to £60 a year. At New College there are forty scholarships, worth £100 annually; at Magdalen thirty demyships valued at

arships of £100 each, and five of £80, besides certain exhibitions; and at Baliol, thirty-eight scholarships of £80 a year, and five of £60, together with thirty-five exhibitions, worth from £40 to £110. We may note here, in parenthesis, that exhibitions differ from scholarships, partly in that they do not constitute their holders members of a college corporation, partly in that the limit of age is often extended, and partly in that they are frequently confined to persons who produce evidence of their need of assistance. We cannot, of course, exhibit in detail the eleemosynary endowments of the twenty-one colleges and four halls comprised within the University of Oxford, but we may say, in general, that the aggregate number of scholarships and exhibitions approximates to eight hundred, representing a total income applicable to the maintenance of accomplished students of at least $200,000 a year. When we hear

hundred, we can appreciate how large a proportion of them obtain an education wholly or in part gratuitous. Nor should we forget that college fellowships, of which there are some three hundred and sixty at Oxford, are really eleemosynary institutions, constituting their holders members of an intra-academical corporation, with a voice in its government and a claim upon its revenues. On the other hand, they involve no duties—a fellow, once elected, being at liberty to follow his own pursuits, whether literary or otherwise. If he chooses, however, he has almost always the opportunity of adding to his income by accepting a tutorship in his own college, the combined revenue from both offices being estimated at from $2500 to $4500 per annum. As a rule, celibacy is a condition of tenure; but if a fellow has taken orders, as most are required to do, he can accept the first vacant benefice in the gift of his college



age belonging to the colleges of Oxford is much larger than that of Cambridge—Christ Church, for instance, controlling nearly twice as many benefices as Trinity, Cantab.

Against the lavish emoluments of scholarship in English universities, let us set the relatively moderate but still considerable provision made at Harvard, which ranks first, as we have said, among American colleges in the amount of help extended to poor students. There are now, it appears, in the gift of this institution, one hundred and twelve scholarships, no less than thirty-two having been endowed within the past ten years. They vary in [illegible] from less than $100 to about $300 a [illegible] annually disbursed

ble by graduates, and intended to assist them in pursuing their studies at foreign universities. It is obvious, from a comparison of these figures with those above cited, that the whole sum yearly disbursed at Harvard University for eleemosynary ends is largely exceeded by single colleges at Cambridge, in England; as, for example, by St. John's or Trinity. When we bear in mind, too, the hundreds of fellowships and benefices held up as the rewards of learning at both English universities, we must concede that the progress thus far made by Harvard in this direction is relatively slight. Whether it has not gone quite far enough, however, is a question which deserves and is receiving the careful attention of its authorities.

XVI.

COMPARATIVE EXPENSE OF LIVING AT OXFORD AND HARVARD.

A QUESTION of considerable interest relates to the comparative cost of an undergraduate course at English and American universities. We need not say that the expenditure of a student varies according to his habits and means, and that we are not here concerned with those cases of absurd extravagance satirized by Thackeray in "Pendennis," and of which most college graduates in England and America can recall some striking examples. It will be quite practicable and useful, however, to convey some notion of the average outlay entailed on a young man who is cut off from none of the reasonable enjoyments incident to an academical career, and this *we can* best do by contrasting Oxford *with Harvard*, each university being gen-

erally reputed the most expensive in its respective country, both as regards the academical fees and the prevailing mode of life.

The obvious groundwork of an attempt to compute an undergraduate's normal expenditure is an exhaustive statement of his imperative disbursements; the computation, in other words, of the minimum outlay with which a college degree can be secured. In endeavoring to fix this minimum for Oxford and Harvard, we shall leave out of view those prizes of good scholarship and aids to needy students of which the American as well as the English university is conspicuously liberal. For our preliminary purpose we will confine ourselves to the case of an undergraduate whose moderate abilities or defective preparation cut him off from the emoluments of academical distinction, and who is forced by straitened resources to eschew every

ative cost of living at English and
ican universities, just as we can only grad-
uate the scope and quality of their tuition
by marking, not the exceptional attain-
ments of brilliant scholars, but the work
explicitly defined in the programmes of
their several schools.

The minimum outlay exacted of an Ox-
ford undergraduate who incurs no trades-
men's bills, and denies himself all volunta-
ry, though it may be common and reasona-
ble, expenditure, is made up partly of fixed
and partly of variable disbursements. The
former include university and college fees;
the latter, comprehending such expenses
as those of board and lodging, vary only,
so far as the colleges and halls are concern-
ed, within definite limits. If these two
classes of expenditure be alone considered,
it is a matter of experience that an Oxford
student who resides within a college or
hall, and who takes the Pass course (which
need occupy only eighteen weeks a year
during a nominal period of three years
... with rigorous economy, obtain the d

gree of B.A. for a total expenditure of $1500. This estimate includes board, room-rent, and washing for twelve technical terms of residence, tuition, and miscellaneous college charges, together with university fees for admission, examination, and degree. The necessary disbursements which it does not cover, however, are clothes, books, railway fares, and the cost of living in the vacations, which, in the case supposed, would practically amount to thirty-four weeks in every year, or nearly two-thirds of the whole period. A man may now graduate at Oxford without connecting himself with any college or hall; but the only pecuniary advantage which an unattached student enjoys over a member of one of those societies is, that he is not liable to the payment of the tuition fee charged upon members of colleges.

Chancellor the undergraduate pays a m
triculation fee of £2 10*s.*; at the prelim
nary university examination, or so-calle
"Responsions," he pays £1; at the ne
public examination ("Moderations"), £
10*s.*; and at the final public examinatio
("Greats"), £2 10*s.* There is also a s
called incorporation fee of £1, an annu
fee of £1, and a fee of £7 10*s.* for the B.
degree, besides miscellaneous disbursemen
ranging from one to five shillings for c
amination and degree certificates. Sum
ming up all the fees exacted by the un
versity proper from a student who seeks
Pass degree, we find the aggregate fallin
a trifle below one hundred dollars.

College expenditures as distinguish

unfurnished, the rent varying in the former case from £10 10*s.* to £30 annually, and in the latter from £6 to £18 18*s.* In certain colleges and halls the kitchen and buttery accounts, or battels, as they are called, are restricted within a fixed limit. Thus at Merton, where the price of the regular dinner served in hall is 2*s.*, exclusive of the buttery charge for bread, cheese, and beer, it is computed that £6 per term will suffice for everything else supplied from the kitchen. At Wadham the weekly expenses in the buttery and kitchen do not usually exceed £1 10*s.* a week; and even at St. John's, where there is no limit to expenditure, the battels of an economical man may be under £40 yearly. The fees payable by the undergraduate to his college for tuition range from £18 18*s.* annually at Jesus to £27 at Corpus. There is also a marked difference in the charges for college servants and the general expenses of

Oxonian may resort is St. Alban Hall where residents pay an annual sum of about £60, which includes tuition, furnished rooms, and board for three terms of eight weeks each. We should add that every college exacts a certain amount of caution money, which is wholly or partly returned when the student's name is removed from the college books. This deposit is only £10 10*s.* at Christ Church, against £40 at Magdalen; while at Keble St. Alban Hall, and Charsley's Hall no caution money whatever is required. All of these societies, with the exception of Keble Magdalen, and New College, and St. Edmund Hall, also require an admission fee which ranges all the way from £1 10*s.* at Merton to £10 10*s.* at Christ Church

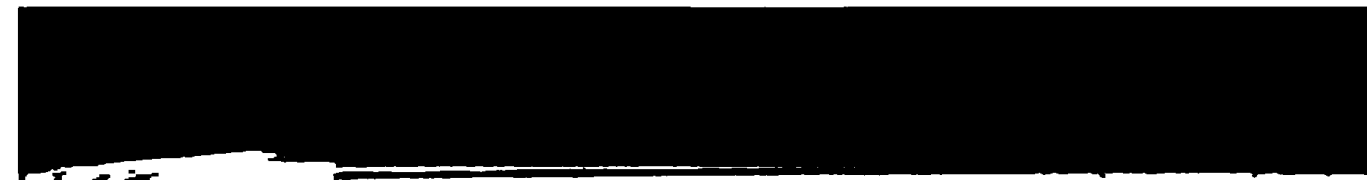
that at St. Mary Hall, for instance, commoners may compound for all university and college dues, including board for three terms of eight weeks each, by a fixed annual payment of £80, shows that our original estimate of $1500 for three years was sufficiently accurate. At this hall the only necessary extra expenses would be for coals, lights, and washing, which, with the outlay for clothing and books, need not exhaust the margin of $300. Having thus found the minimum cost of residing at Oxford during twelve terms, which represent, as we have seen, from eighteen to twenty-four weeks annually for three years, we will now compare these figures with the lowest practicable expenditure of a self-supporting student at Harvard University.

At Harvard the tuition fee is $150 a year, and the weekly price of board in the club dining hall, according to the President's report for 1877, '78 was $4 03, or about

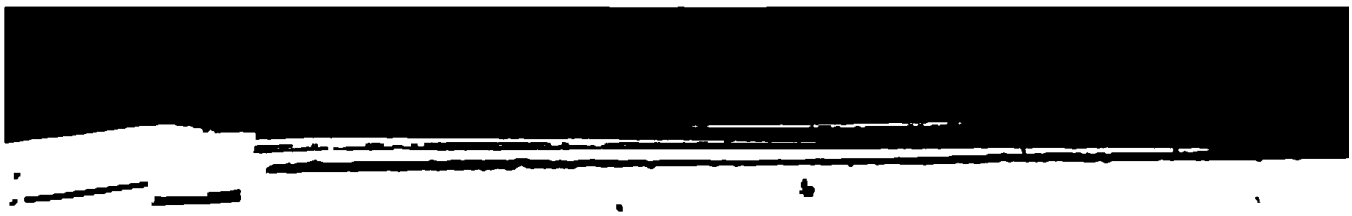
washing, books, and clothing, we shall have a total of $450, which may fairly enough be deemed the minimum expenditure of a Harvard undergraduate. This would mean an aggregate outlay of $1800 in the four academical years, a sum rather below than above the Oxonian limit, when we take into account the fact that a college year at Harvard means nearly twice as many weeks as at Oxford. In other words, four years at Harvard really cost less than three years at Oxford. So much for the necessary expenses. Now for the average amount which a son of affluent parents may reasonably be expected to spend in either university without acquiring a reputation for extravagance: this now varies, we are told, at Harvard from $1000 to $1800 a year

expenditure. Indeed, if a man hunts pretty constantly, as many would do, £500 would not leave much money, after all necessary charges had been met, for the gratification of gastronomic or æsthetic tastes. Commoners have been known to spend £2000, or even £3000 a year at Oxford without the censure of college dons, or attracting much notice among undergraduates outside of their own set. On the other hand, it is doubtful whether such sums could be disbursed by a Harvard student without calling forth a good deal of remark among his classmates, and sharp expressions of disapproval on the part of the Faculty.

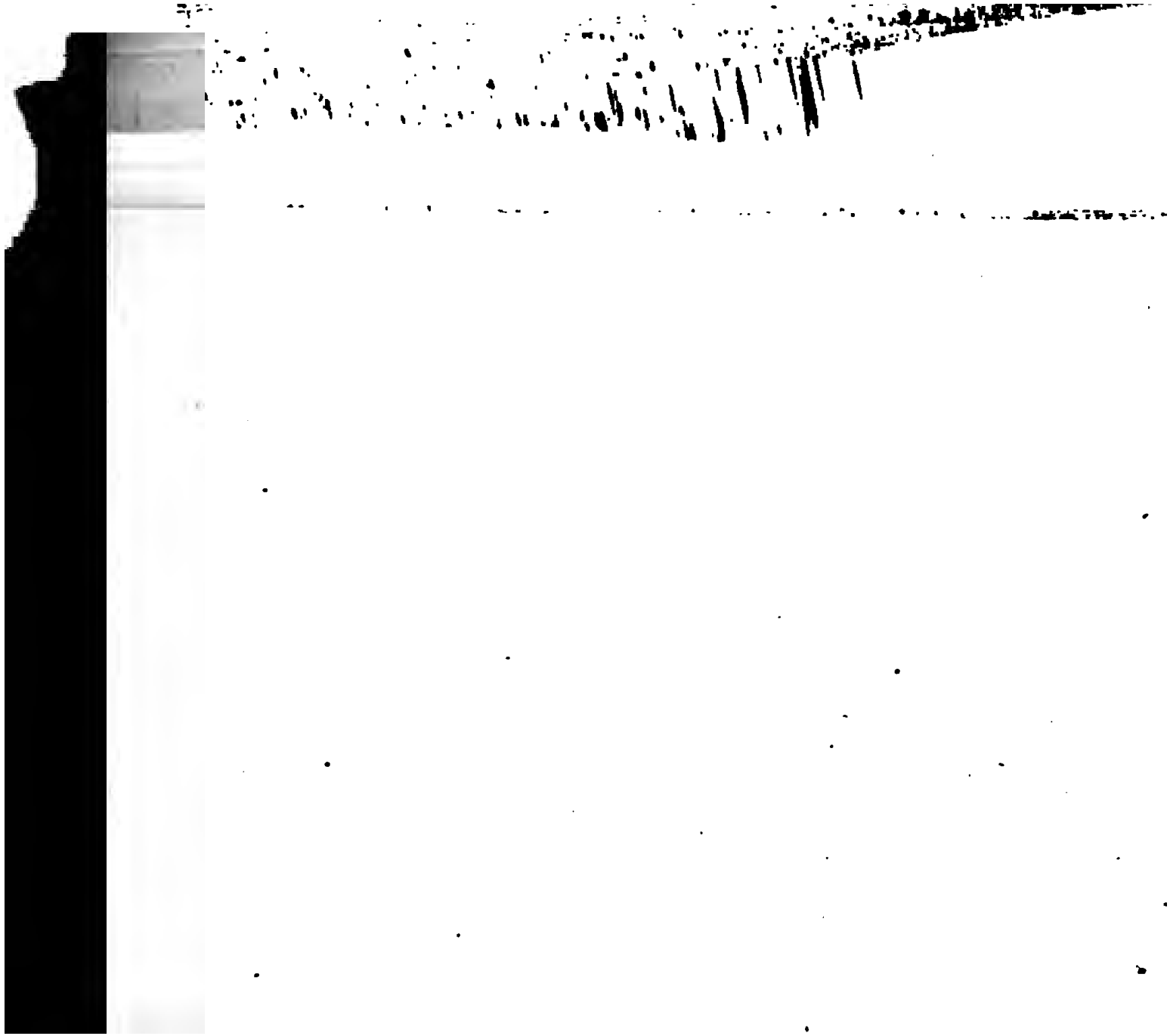
THE END.















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